1.0 INTRODUCTION

This Site Action Plan has been prepared by International Technology Corporation (IT) for IT and their subcontractors to conduct the project activities at the Conservation Chemical Company of Illinois (CCCI) site in Gary, Indiana (Figure 1). The remedial activities will be performed in four steps:

- Step I - Removal and transport of cyanide liquids and dregs for off-site treatment and disposal
- Step II - Removal and transport of acid liquids and dregs for off-site treatment and disposal
- Step III - Removal and transport of Tank #20 sludges for off-site disposal
- Step IV - Secure empty tanks

This plan presents the general approach to the project, including the methods to be used to rectify the existing situation, and establish the guidelines for all subcontractor work. This plan includes Site Background (Section 2.0), Project Review (Section 3.0), Work Plan (Section 4.0), Project Management (Section 5.0), Health and Safety Plan (Section 6.0), and Emergency Contingency and Response Plan (Section 7.0). A project schedule is included as Table 3.

2.0 SITE BACKGROUND

Much of the background data is from U.S. EPA and site records and has not been verified. CCCI, 6500 Industrial Highway, Gary Indiana, began operation at this location in April of 1967. Prior to 1967, the facility was owned and operated by the Berry Oil Company as a petroleum oil refinery. A number of drums and tanks currently on the site were left over from when the site was operated as a refinery. The first eight years CCCI was in operation (1967 to 1975), the facility operated as a producer of ferric chloride, which was marketed as a coagulant for wastewater treatment plants. In 1975, the company ceased production of ferric chloride and began to operate as a hazardous waste terminal and treatment facility. At that time, the facility's primary method of treatment involved waste neutralization. The cyanide waste that is presently stored on-site resulted when the site operated as a treatment facility. In 1980, CCCI was forced into cessation of its hazardous waste activities, reportedly as a result of its inability to comply with federal government hazardous waste regulations. CCCI then redesigned the plant for reinstatement of its ferric chloride production. The ferric chloride operation ceased in December, 1985.

In October 1985 IT Corporation was retained to prepare a site Health and Safety Plan, a Fence Plan, and a site Sampling Plan. These plans were submitted to Region V Office of U.S. EPA and were approved. IT proceeded with implementation and constructed a fence around the site. IT next began the sampling program. Tanks defined as a part of the project were sampled for both aqueous and dreg material. These samples were then analyzed by the IT Corporation laboratory in Knoxville, Tennessee. The results of that analytical testing are attached as Appendix C.

Additional samples were then forwarded to Nelson Industrial Services in Detroit, Michigan for treatability testing. Those results are listed in Table 3. The treatability tests confirmed our suspicions that the sulfides identified in the analytical reports were in fact a false positive from the masking effect of the metals present in the samples, and were actually sulfates. With assembly of the background data completed, IT was then retained to prepare a Site Action Plan.

2.1 TANK FACILITY

The CCCI facility contains numerous above ground bulk tanks of various sizes used for storage purposes. The location of these tanks is shown in Figure 2. Physical characteristics of the tanks are listed in Table 1.

2.2 WASTE INVENTORY

The chemical analysis of the tanks reported by IT in May 1986 is presented in Table 2. A total of 13 storage tanks, containing metal-laden cyanide-contaminated liquid wastes, exist on-site and were generated from metal plating operations. Concentrations of total cyanide in the aqueous portion of these tanks range from 7,400 parts per million (ppm) to 38,000 ppm. Several of these tanks have dreg material (sludge), with relatively high concentrations of cyanide. Also, three tanks, Tanks 11, 29 and the Tower have "dry dreg" (due to being exposed to the atmosphere) that have significant quantities of total cyanide. The majority of the cyanide waste storage tanks are located along the northwest side of the railroad spur across from the office/shop building. Three other cyanide storage tanks are positioned directly adjacent to the office/shop building, and are noted as the spherical tank (Sphere), the cracking tower (Tower) and Tank 62. Another tank, Tank 21, located toward the southern apex of the site also contains cyanide.

Tanks 9, 32, 34, and 36 contain liquid acid waste and/or acid dregs. These tanks, except Tank 9, are located in the center of the site. Tank 9 is located among the cyanide containing tanks along the northwest side of the railroad spur.

Tank 20 contains sludges and is located along the southern edge of the site and just west of the office complex.

Many of the tanks exhibit deteriorating conditions, as evident by holes in the sides and along the top of the tanks.

The wastes will be removed and disposed in three steps:

- Step I - Cyanide Wastes: Tanks 1, 3, 4, 6, 7, 8, 11 (dreg only), 12, 17, 18, 21, 29 (dreg only), 62, Tower, and Sphere
- Step II - Acid Liquid/Dregs: Tanks 9 (dreg only), 32, 34, and 36
- Step III - Sludge: Tank 20

The fourth step of the project will be to secure all empty tanks, as listed in Table 1.

3.0 PROJECT REVIEW

A brief review of project accomplishments is as follows:

- Site Fencing Plan prepared and reviewed. Authorization to extend the fencing beyond property lines in order to encompass additional areas was negotiated with the railroad and one adjacent property owner.
- Site Health and Safety Plan completed and reviewed.
- Fence construction completed.
- Sampling Plan prepared covering all tanks on site suspected of containing either acid or cyanide wastes. The plan called for extensive sampling of both liquid and dreg phases in each tank.
- Sampling work was accomplished with all personnel working under Level B protection when directly in contact with the samples. Two sets of samples were collected. One was forwarded to the IT laboratory in Knoxville, Tennessee for analysis, and the second set was held on site for future treatability studies.
- Analytical data was received from the laboratory. The tanks were categorized into three divisions based upon their contents. These divisions were (a) liquid/dreg cyanide, (b) liquid/dreg acid, and (c) sludge. The second set of samples was forwarded to Nelson Industrial Services in Detroit, Michigan for treatability study.
- Determination was made that the cyanides and acids could be chemically treated to render them safe and the sludge could be dewatered/solidified for disposal in an approved landfill.
- Requests for proposals were prepared for the various elements of the project, with consideration being given for both on-site and off-site treatment of the waste. A listing of the facilities contacted is included as Table 4.
- All bids received were analyzed for technical merit and compliance with health and safety standards which would best protect site personnel and the surrounding community.

- Final decision was made to chemically treat the cyanides and acids at an off-site location and to solidify the sludge for disposal in an approved landfill. This Site Action Plan was developed to detail the implementation of this approach.

4.0 WORK PLAN

4.1 STEP I - TRANSPORT, TREATMENT AND DISPOSAL OF CYANIDE WASTES

4.1.1 Task 1 - Mobilization

Prior to conducting tank emptying and waste hauling, the project field team will be on-site to perform the following activities:

- Designation of contaminated areas and traffic routes
- Construction of decontamination areas
- Construction of truck decontamination pad
- Setting of shower and office trailers
- Hook-up of all utility services.

A tentative layout of the above facilities is presented in Figure 2.

This task will also serve to provide field services for Step II and Step III activities.

4.1.2 Task 2 - On-Site Transfer and Temporary Storage

This task is designed to include those activities associated with the removal of the cyanide-laden liquid, slurry and rinsate wastes from the tanks prior to transportation. It is anticipated that the liquid wastes from the various tanks will be bulked in fractionation (frac) tanks in an effort to provide economic loads for transporting to the disposal facility. This work is scheduled to be performed by __________ (to be announced).

Subtask 2.1 - Compatibility Analysis

Before wastes from individual tanks are allowed to mix in the frac tanks, compatibility tests will be performed on the tank wastes. Compatibility testing will be performed on-site or at IT's Knoxville Laboratory utilizing sample material left over from the May 1986 sampling effort.

The compatibility process will be aided greatly by hazardous categorization testing during sampling and the analytical results included in Table 2. These results provide the following tentative groupings:

- Cyanide - Liquids - Step I

  Tanks 1, 3, 4, 6, 7, 8, 12, 17, 18, 21, 62, Tower and Sphere.

  - Tank 17 due to its Volatile Organic Compound (VOC) concentration may be separated out from this group.

  - Dregs in these tanks may also be compatible.

- Cyanide - Dregs - Step I

  Tanks 11, 29, and Tower.

  - Tower dreg may not become part of a slurry. Its removal may, therefore, change the scope of work.

Sampling of frac tanks conducted during the project will generally follow the guidelines contained in the final Sampling Plan attached as Appendix B.

Samples from frac tanks will be collected through the manway located on top of the tanks. Approximately a quart volume of material will be obtained. The sample bottle will be clearly labeled and ~~will be~~ packaged for shipment according to all applicable transportation rules and regulations. A chain-of-custody form will accompany the sample to the treatment/disposal facility. The facility will analyze the sample to determine its conformance with the previously approved waste stream. It will be the IT Project Manager's responsibility to collect a split sample during the frac tank sampling in the event it becomes necessary to verify the facility's results.

Samples of the rinsate which is generated will be collected in a similar manner to that of the tank wastes.

The amount of liquid wastes/dregs and rinsate generated from tank cleaning during Step I is estimated to be roughly 159,000 gallons. Each frac tank will hold about 15,000 gallons. It is estimated that approximately 12 samples will be collected.

It is anticipated most, if not all, of the sludge in the cyanide tanks will be converted into slurry and pumped out to the frac tanks with the liquid waste. Sludge that cannot be converted to slurry will be removed from a tank and drummed and transported to Nelson for treatment. Samples will be collected of the sludge before the waste is transported off-site. The treatment/disposal facility will analyze the samples for confirmation with prior waste stream analysis.

Subtask 2.2 - Evacuation and Temporary Storage of Tank Liquids

The tank liquids will be evacuated in the following order: 1, 3, 4, 6, 7, 8, 18, 62, sphere, 11, 12, 17, 21 and 29.

Liquids will be removed from the tanks using a vacuum truck. The vacuum truck hose will be inserted into the tanks via manways or other openings from the tops of the tanks. The liquids will be transported via the vacuum truck to the frac tanks. A submersible pump will be available to serve as a back-up in the event the vacuum truck is unable to pull all material from a tank.

Compatible liquids will be mixed, sampled, and analyzed (Section 4.1.2) for bulk shipment to an off-site facility. When one of the two frac tanks is filled to three-quarters of its capacity, which will be considered its full state, sampling will be conducted. The other empty frac tank will continue to receive tank liquid. As soon as the chemical analysis is reported, the frac tank which is filled and sampled, will be transferred into a tanker trailer for transport.

A three-man crew equipped in Level B protection will be required for removal operations at any given tank in accordance with the Health and Safety Plan (Section 6.0).

Following removal of the liquid wastes from a tank, the side hatch or manway to the tank will be removed. In the event the manways cannot be removed, access ways will be cut into the tanks. The structural integrity of the tank will be investigated before cutting. The dreg material within the tanks will then be pumped via trash pumps into vacuum trucks. It is anticipated that the majority of the dreg material will be removed from the tanks in this matter. Material that can not be removed by this technique will be removed during the tank cleaning process (Subtask 2.5).

Subtask 2.3 - Sampling and Analysis of Tank Liquids

The description for sampling and analysis of the cyanide wastes is contained in Section 4.1.2.

Subtask 2.4 - Decontamination of the Tower

Decontamination of the Tower will be conducted in a top to bottom manner. The top of the Tower will be accessed via a manlift. The Tower will be washed, utilizing a fire hose or "hotsy" from the uppermost manway on the Tower. Wash water will be collected from the bottom of the tower and evacuated via a trash pump into a frac tank for holding.

Prior to initiating cleaning of the Tower, all lower manways will be checked to make sure they are secured. In addition, a berm will be constructed around the Tower in case leaks or overflows occur. The area within the berm will be lined with visqueen to reduce downward migration of any spilled liquids. A sump will be constructed in a portion of the bermed area to collect spilled liquids to then be pumped to a vacuum truck.

A three-man crew will be required for cleaning of the Tower. All crew members shall wear safety harnesses and be secured at all times. The crew shall also wear Level B safety protection in accordance with the Health and Safety Plan.

Subtask 2.5 - Tank Cleaning

After evacuating the liquid waste from a tank, it will be cleaned with an appropriate triple rinse using a high pressure water blast, or other appropriate method, to a visually clean state.

The tank will be washed down from a manlift when possible with either a "hotsy", a fire hose, or a high pressure water blaster. Prior to spraying of the tank walls, access way covers will be replaced to prevent loss of liquid. In those cases where access to the tank is cut above ground level, visqueen will be placed over the opening on the inside of the tank to eliminate spray loss. Care will be taken to ensure that the liquids generated from the cleaning operations will not overflow from the tank. A catch basin of visqueen and sand bags will be arranged around each tank to contain spills.

It is assumed that no entry into the tank is required and the washdown water will help turn the sludge into a slurry of a pumpable consistency. In the event that dreg materials remained in the tank from Task 2, the wash waters will be used to slurry those materials. Any slurries generated will be removed via trash pumps into vacuum trucks, and then transferred for shipment to Nelson Industrial. Dreg materials that do not go into slurry will be drummed and shipped to Nelson for treatment. Upon removal of the dreg material, the bottom of the tank will be rinsed to a visually clean state.

Subtask 2.6 Evacuation and Temporary Storage of Tank Slurry and Rinsate

The slurry and rinsate generated during cleaning of the tanks will be held in each respective tank, and then pumped with trash pumps into a frac tank. The pumping will be done through access of the manway inside of vertical tanks or cutouts in horizontal tanks. The bulked rinsate and slurry will be sampled, and the sample forwarded to Nelson Industrial for analysis prior to transport.

It is assumed that all dregs will go to slurry and become pumpable; any dregs that do not slurry must be removed manually and drummed for shipment to Nelson. After removal of the dregs is completed the tanks will be squeegeed and wiped on the bottoms.

Subtask 2.7 - Sampling and Analysis of Tank Rinsate

The description for sampling and analysis of the rinsate generated during the cleaning of the tanks containing cyanide wastes is contained in Section 4.1.2.

Subtask 2.8 - Tank Inspection

Tanks will be rinsed to attain a visually clean state. Tanks will be inspected and recorded by the general contractor to verify visual cleanliness.

4.2 STEP II - TRANSPORT, TREATMENT AND DISPOSAL OF LIQUID ACID AND DREGS

4.2.1 Task 1 - Mobilization

Step II will follow immediately after Step I and no additional mobilization will be required.

4.2.2 Task 2 - On-Site Transfer and Temporary Storage

This task will be performed in the same manner as the work described in 4.1.2. The frac tanks used for bulking the acid will not be the same as those used for the cyanide waste.

Subtask 2.1 - Compatibility Analysis

See Section 4.1.2, Subtask 2.1. Preliminary compatibility evaluation from earlier analytical results, as shown in Appendix C, provide the following:

Acid Liquids/Dregs
Tanks 9 (dreg only), 32, 34, and 36

- Tank 9, due to its high VOC content, may be handled separately.

- Tank 32 has a higher pH and flocculated type of sludge and may be separated from Tanks 34 and 36.

Subtask 2.2 - Evacuation and Temporary Storage Tank Liquids

The tank liquids will be evacuated in the following order: 32, 34, 36. Liquids will be removed and tanks cleaned using the same technique as described in 4.1.2, Subtask 2.2.

Subtask 2.3 - Tank Cleaning

The tanks will be cleaned using the same techniques as described in 4.1.2, Subtask 2.5.

Subtask 2.4 - Tank Inspection

See 4.1.2, Subtask 2.8

4.3 STEP III - TRANSPORT, TREATMENT AND DISPOSAL OF TANK 20 SLUDGE

4.3.1 Task 1 - Mobilization

This work will follow Step II without interruption.

4.3.2 Task 2 - On-Site Transfer and Solidification of Sludge

Sludge contained in Tank 20 will be removed by means of a clamshell bucket and a crane. The material will be transferred from the tank into roll-off boxes and tested for free liquids utilizing the "paint-filter" test. The test used will be the "paint-filter" test. If the material is found to be a solid it will be transferred to lined dump trailers for transport to Fondessy Enterprises (Fondessy) landfill, Oregon, Ohio. If free liquids are found, an appropriate agent will be added such as fly ash or kiln dust, to solidify the material and make it acceptable for landfill disposal. It will then be loaded into lined dump trailers for transport to Fondessy.

Subtask 2.1 - Waste Stream Analysis

Prior to transport of any material to Fondessy, a sample will be taken and forwarded to the landfill for analysis, and all necessary documentation will be completed.

Subtask 2.2 - Tank 20 Liquids

The presence of an aqueous phase in Tank 20 is dependent upon the amount of recent precipitation. Should there be aqueous material present, it will be removed by vacuum truck and transferred to a tanker trailer for transport to Nelson for treatment. A sample would be taken and forwarded to Nelson prior to transport in order to determine treatability and cost.

Subtask 2.3 - Tank Cleaning

The tank will be cleaned using the same techniques as described in 4.1.2, Subtask 2.5.

Subtask 2.4 - Tank Inspection

See 4.1.2, Subtask 2.8.

4.4 STEP IV - TANK SECURING

Upon completion of cleaning, any tank judged to be unstable will be lowered to the ground and left in a horizontal position.

4.5 TRANSPORT TO OFF-SITE FACILITY

This task details those procedures necessary for hauling of the liquids, dregs and sludge wastes from the site.

4.5.1 Selection of the Waste Hauler

The selected hauler to Nelson is Bentley Oil Inc. of Taylor, Michigan. Solid wastes will be transported to Fondessy Enterprises by Jack Gray Trucking.

4.5.2 Traffic Control

Traffic control at the site will be phase specific. Traffic control for the project is shown on Figure 2. It is anticipated that filling of over-the-road vehicles will be accomplished from hard plumbing running from the frac tanks to the loadout area. Filling operations will be conducted in accordance with The Site Health and Safety Plan.

It is anticipated that a vacuum truck and water truck will be utilized on-site. These vehicles will not leave the site until the project has been completed. Decontamination of the site vehicles will occur at a decontamination pad which will be provided.

4.5.3 Waste Manifesting

Manifesting of the wastes will be the responsibility of the on-site sub-contractor. IT will review the manifests for completeness and accuracy, and will obtain a copy of the manifest for site records. IT will sign the manifests upon proper written authorization to do so.

Proper placarding of over-the-road vehicles will be the responsibility of the subcontractors and will be checked by IT personnel. Labeling of special containers will be performed by IT personnel.

4.5.4 Truck Registering

Over-the-road trailers will be dedicated to this job. For purposes of this job, each trailer will be assigned a unique number identifying the vehicle. This number will be used by IT to identify the trailer and its characteristics (i.e., empty weight, gross weight, make, etc.). A site log will be maintained indicating appropriate information such as the I.D. number and trailer usage for site activities.

4.6 TREATMENT AND DISPOSAL AT THE OFF-SITE FACILITY

This task details those activities associated with management of treatment and disposal of the liquid wastes.

4.6.1 Selection of Facilities

IT has solicited bids from qualified area treatment, storage, and disposal (TSD) facilities for treatment and/or disposal of the cyanide and acid wastes.

Nelson Industrial Services Inc. (facility) was selected following a review of the bids submitted. Facility selection was based on, but not limited to:

- o Facility's ability to treat the wastes
- o Operational history of the facility
- o Facility's ability to handle wastes in a timely manner
- o Cost.

4.6.2 Waste Receipts and Invoicing Approval

IT will obtain, on a twice a week basis, copies of the signed Uniform Waste Manifest forms received at the facility for wastes transported from the site. IT will review the copies to determine if the facility's records match the site's records and that all wastes shipped were received by the facility. Discrepancies will be immediately noted in the site log book and resolved with the transporter and the facility.

It is anticipated that invoices for treatment/disposal services will be submitted to IT. IT will review the invoices to determine that the services rendered for the amounts indicated agree with site records and the treatment/disposal agreement.

4.6.3 Facility Audits

IT Quality Assurance personnel will conduct an audit of the facility at the landfill before, during, and after shipment of wastes. The purpose of the audits will be to confirm the landfill's and the facility's ability to handle the wastes, review of waste treatment/disposal procedures, and review record keeping procedures. A report will be issued following completion of the final audit.

In the event that major QA problems are noted, the IT site manager will be immediately notified, and shipments to the facility will be terminated until such time as the QA problems are resolved and approval for commencement of shipments is received.

4.6.4 Demobilization

This task details those activities associated with demobilization from the site. These activities include:

- Cleaning and removal of the frac tanks: The frac tanks used for cyanide wastes will be cleaned using a hypochlorite solution prior to removal from the site. Rinsate solutions will be transported to the facility. Frac tanks used for acid wastes will be triple rinsed. Rinsate will be transported to Nelson.

- Decontamination of site vehicles: The vacuum truck will be internally cleaned using a hypochlorite solution. The rinsate will be transported to the facility. Both the water truck and vacuum truck will be externally cleaned utilizing a steam cleaner. External cleaning will be conducted at the decontamination pad with the wash water collected and transported to the facility.

- All hoses, plumbing, pumps and other tools and equipment will be deconned using a hypochlorite solution or drummed and transported to Fondessy Landfill.

- The administrative and shower trailers will be removed from the site.

- All disposed tyvek suits, gloves, cartridges, etc., will be drummed and transported to Fondessy Landfill.

4.6.5 Report

A report will be prepared to document all activities performed, waste volumes removed, volumes treated/disposed, QA/QC results, and a summary of the project costs. In addition, the report will include copies of manifests and other appropriate documentation.

4.7 PROJECT SCHEDULE

The schedule for the project is presented in Figure 3. The field activities will require approximately 45 working days for completion. A final report will be prepared approximately five weeks after completion of all field work.

5.0 PROJECT MANAGEMENT

IT will provide managerial services for the efficient, safe, and timely accomplishment of this project.

5.1 OBJECTIVES

The objectives of IT's project management services are:

- Selection of qualified and cost-competitive subcontractors (completed)
- Provide supervision and coordination of all project activities
- Ensure that site activities are performed in a manner in accordance with the project health and safety plan
- Document all project activities.

5.2 PROJECT TEAM

IT will serve as General Contractor for the site, and will accept full responsibility for the total conduct of the job. IT will provide project management, health and safety enforcement, audit of field activities, and audit off-site treatment/disposal facilities.

IT will provide one superintendent to oversee all site activity during the on-site work. IT proposes to also dedicate an Industrial Hygienist to monitor site safety conditions at all times that on-site activities are being conducted. In addition to monitoring site activities, the Industrial Hygienist will conduct air monitoring at the site using cyanide and hydrogen sulfide detectors and other air monitoring devices.

5.3 AUDITS OF FIELD ACTIVITIES AND OFF-SITE TREATMENT/DISPOSAL FACILITIES

IT will provide a constant audit of the activities performed during waste transfer, and tank cleaning. This will be to confirm that all appropriate procedures are followed and documentation of all activities are properly completed with the amounts of waste removed and analytical results being accurately reported. The off-site treatment and disposal facility and the landfill will also be audited at least weekly, to confirm that the waste is being properly treated and disposed.

6.0 SITE HEALTH AND SAFETY PLAN

6.1 PROJECT OBJECTIVES

The CCCI facility, encompasses a triangular four-acre parcel of land at 6500 Industrial Highway (Figures 1 and 2). The site is bounded on the west and southeast sides by the Elgin, Joliet and Eastern Railroad right-of-ways and on the northeast side by a vacant industrial lot. The Gary Municipal Airport borders the site along the southeast side. A security fence has been established around the site with 24-hour security provided. Access to the facility can be attained only through the guard stationed at the entry gate.

The objective of this document is to provide a site specific Health and Safety (H&S) Plan for IT and its subcontractors for project activities to be conducted at the site. These activities include:

- Removal and transport of liquid wastes from the tanks for off-site treatment and disposal
- Removal and transport of dregs/sludges for off-site treatment and disposal
- Cleaning of tanks and subsequent transport of rinsate for off-site treatment and disposal
- Sampling of wastes prior to off-site removal
- Securing of tanks listed in Tables 1 and 2.

This H&S Plan has been prepared based on presently existing site conditions. If these conditions were to change during project activities, health and safety adjustments will be made accordingly. As noted in Section 6.3, it will be the responsibility of the Site Industrial Hygiene (SIH) representative to make the needed adjustments.

6.2 KNOWN SITE HAZARDS

Site hazards include both physical and chemical hazards. Many of the tanks exhibit extensive rusting; some of the tanks (e.g., Tank 20) have had their tops partially destroyed. The manways of the tanks according to CCCI personnel should not be trusted. In addition, the stairway on the Tower is in poor condition and should be approached with extreme care.

The bulk storage tanks on-site are generally in a deteriorated condition. The tanks should not be manipulated at any time until their liquid contents are removed. Waste handling will be performed from manways or other openings located above the liquid level of the tanks.

Based on the information obtained from previous site investigations, discussions with former CCCI employees and the analyses reported in Table 2, the following chemicals pose potential health risks to site personnel.

6.2.1 Cyanide

A cyanide release at the site would endanger the health and welfare of the workers in the direct vicinity. The release of cyanide vapor is most common in the presence of acids, which liberates a hydrogen cyanide (HCN) vapor. HCN vapor concentrations in air above 100 ppm have been found to be fatal to man after 30 minutes of exposure. A concentration of 270 ppm is immediately fatal (Patty, 1978). The behavior of the cyanide ion prevents the uptake of oxygen by the tissues with resulting asphyxial death. The cyanide ion is absorbed into all tissues; cyanide can be readily absorbed through the skin. The currently accepted threshold limit value (TLV) for HCN and cyanogen in the United States is 10 ppm.

6.2.2 Polychlorinated Biphenyls (PCBs)

Tanks containing PCB materials are not part of the project activities. However, the presence of PCBs on-site and in tanks near those scheduled for clean-up is of concern to the project team.

PCB contaminated materials have been identified in Tanks 19 and 22 (Figure 2). Most of the waste in Tank 19 has been transferred to Tank 22. Tanks 13, 14, 15 and 16 were observed to contain a thick oil mixture. These tanks appear to be part of a previous PCB clean-up operation at the site. During a past inspection, the contents of Tank 19 were observed to have leaked from the tank and spread to the area bounded by the rail spurs to the east and west of the acid soil area indicated on Figure 2.

6.2.3 Sludge Material

Tank 20 contains material referred to as "sludge"~~, which resulted from neutralization of waste pickling liquor~~. Inspection of the tank has shown it to be in poor condition and portions of the top of the tank have been destroyed allowing rain water and snow to enter the tank. In addition, the tank has a past history of leakage.

The potential dangers presented by Tank 20 involve primarily the quantity of hazardous material in the tank and the deteriorated condition of the tank. The high concentrations of metals in the tank pose a significant threat to personnel through ingestion or direct contact.

6.2.4 Waste Solvent Material

Tanks 23 and 24 contain a material that is a combination of a variety of chlorinated hydrocarbons that were mostly generated as solvents. The tanks contain solvent material that is dominated primarily by a methylene chloride-hydrocarbon mixture. Analyses have shown the organic chloride content ranges from 8.5% to 14.5%. Based on a conversation with a former CCCI employee (Mr. Chet Nellett), Tank 31 also contains a solvent mixture whose content is unknown, at present. These tanks will not be part of the project, but personnel should be aware of their presence and take the appropriate action to minimize any releases from the tanks.

6.2.5 Waste Acid and Chlorine

Highly acidic wastes are present in Tanks 34 and 36 as liquids and in Tank 9 as a dreg/sludge. The contents of Tank 32 are less acidic. Tank 34 is potentially highly dangerous due to its large volume, a pH of less than one, and deteriorated condition of the tank. It is not known if cylinders of chlorine gas still exist on-site. For protection from the accidental release of chlorine gas and the risk from cyanide gas described in 6.2.1, emergency escape respiratory protection shall be provided to all site employees.

6.2.6 Silicon Tetrachloride

Tanks 40, 41 and 42, located west of the office shop-work area complex, are believed to contain silicon tetrachloride. This compound is a highly irritating, colorless, corrosive fuming liquid that has an odor described as "suffocating". It is highly toxic by both inhalation and ingestion. As with the solvent and PCB-containing tanks, these three tanks are not part of the project activities. Project team members should be aware of the location of these tanks and avoid any contact with them. DO NOT BRING INTO CONTACT WITH WATER.

6.3 PROGRAM STRUCTURE

This Health and Safety Plan prescribes workplace procedures which will be followed in order to protect employees who will be performing the following tasks:

- Removal and transport of wastes (liquids and dreg) from the tanks for off-site treatment and disposal
- Tank cleaning with subsequent removal and transport of rinsate for off-site treatment and disposal
- Collection of samples from frac tanks.

The requirements listed may change as work progresses due to changing conditions, but no changes will be made without prior approval by the SIH, also referred to as the Site Safety Officer (SSO). The program outlined in this Health and Safety Plan is for IT, subcontractor personnel, and all site visitors.

The SIH representative will be responsible for the coordination of this plan. He/she, or one or more of their representatives, will be on-site for the project start-up and through the course of the project to supervise the worker protection program. Liaison with the U.S. EPA and its representatives and/or subcontractors on matters relating to safety and health will be handled by the SIH representative.

The IT Project Manager is responsible for field implementation of the Health and Safety Plan, but only the SIH representative can change its provisions. The Project Manager's responsibilities include communicating the specific requirements to all personnel, conducting audits, and consulting with the SIH regarding appropriate changes in safety and health requirements. Specific site functions that the SIH will be responsible for implementing include:

- Supervise the day-to-day implementation of the site-specific health and safety program
- Train new site personnel on the specific site health and safety items, interact with project personnel on health and safety matters, investigate and report accidents/ incidents
- Maintain liaison between field activities and regulatory personnel
- Perform air quality and personal monitoring as required
- Enforce the requirements of this manual and the site-specific program.

All on-site personnel are responsible for understanding and complying with the requirements of this plan. Failure to comply with this plan will result in disciplinary action, which could lead to removal from the site or termination.

6.4 PERMISSIBLE EXPOSURE LIMIT GUIDELINES

Eight-hour time-weighted average for threshold limit values (TLV), concentrations immediately dangerous to life or health (IDLH) and other physical characteristics of chemicals most likely encountered during work covered by the scope of this plan, are as follows:

	TLV	IDLH	COMMENTS
Hydrogen Cyanide	10 ppm	50 ppm	Bitter almond odor, weakness, headache, nausea, vomiting at lower concentrations. See Section 6.2.1.
Methylene Chloride	100 ppm	5000 ppm	Avoid eye-skin contact. Odor Threshold: 300-600 ppm
Hydrochloric Acid	5 ppm	100 ppm	Colorless gas with irritating odor. Avoid eye, mucous membrane contact.

Material Safety Data sheets for these compounds are attached in Appendix A.

6.5 TRAINING PROGRAM

All personnel, prior to being allowed site access, will attend a training session conducted by the SIH that communicates the potential H&S hazards on the site and instructs the individuals on the requirements of the H&S plan. This training will be designed to address the requirements of OSHA Hazard Communication Standard (29 CFR 1910.1200), OSHA Hazardous Waste Operations and Emergency Response, Interim Final Rule (29 CFR 1910.120), and health and safety training required under RCRA.

6.5.1 Preproject Training

All employees and contractors who work on site shall have successfully completed a formal training program which shall include, as a minimum, the following items before they are permitted to enter the Exclusion or Decontamination zones:

- Basic Safety Training - This course shall stress fundamentals such as the cause and prevention of slip, trip, and fall hazards; safe lifting techniques; heat stress illnesses and their prevention.
- Hazard Protection - This course shall deal with the identification, recognition, and safe work procedures of toxic materials. The use and limitations of applicable protective clothing, and decontamination procedures are an important part of this course.
- First Aid and Cardiopulmonary Resuscitation (CPR) - A portion of employees will have completed the standard Red Cross First Aid and CPR courses.
- Health Hazard Awareness - Information shall be given concerning hazardous materials on site to which employees may be exposed. Information will include routes of exposure, toxic effects, appropriate protective equipment, medical surveillance, and the specific nature of the job which could result in exposure to hydrogen cyanide, hydrochloric acid, and methylene chloride.
- Work practices and engineering controls to minimize risk.
- Emergency Response Training - Procedures outlined in site emergency procedures are to be reviewed with all personnel on site.

- Hearing Conservation Program.
- Respirator training - The use, limitations, and inspection of air purifying respirators, and SCBAs will be discussed. Proper decontamination procedures will also be covered. Respirator fit test will be given to all personnel consisting of qualitative fit test using irritant smoke in a plastic containment. Personnel shall breath normally and heavily, move their heads up and down and side to side, and talk while wearing the respirator in the smoke. Upon completion of this training, the employee will be asked to complete the form illustrated in Figure 4.

All employees and contractors, who are expected to enter the Exclusion and/or Decontamination Zones (Section 6.8.1 and 6.8.2, respectively) shall have received a minimum of 40 hours of initial off-site instruction. On-site supervisors shall complete at least eight additional hours of specialized training.

6.5.2 Daily Safety Meetings

A daily safety meeting will be conducted at the beginning of each shift or whenever new employees or contractors arrive at the job site once the job begins. These meetings discuss the H&S considerations for the day's activities and outline the necessary protective equipment. This meeting will be conducted by the SIH who will complete the Tailgate Safety Meeting form shown in Figure 5.

6.5.3 Training Records

All training that is conducted on site will be documented using the appropriate forms (Figure 6) and for IT personnel will be retained in the employee's job file. Forms covering sub-contractor employment will be forwarded to those organizations, with a copy retained in the project file.

6.6 MEDICAL SURVEILLANCE

6.6.1 Pre- and Postproject Physical Examinations

All personnel that work in the Exclusion or Decontamination Zones will receive a pre- and postproject physical examination. The preproject physical will take place within 15 days prior to working on site and the postproject physical will take place within 30 days after leaving the site. The examination will include:

- Medical and occupational history and physical examinations (including a history of respiratory disease)
- Complete blood count and differential
- Urinalysis (dip stick and microscopic)
- SMA-20 or equivalent
- Audiometric examination
- Chest X-ray (14 x 17 posterior/anterior view)
- Pulmonary function test (FVC and FEV 1.0)
- EKG for employees over 45 years of age or when there is an indication of problem
- Vision acuity and color
- Drug and alcohol screen.

The chest X-ray may be omitted for IT personnel who have had one within the past year.

6.6.2 Injury and Illness Treatment

Any employee who is suspected of having an over exposure to the chemicals on site will be given a complete physical examination. The Whiting Clinic, Inc. (with offices in Hammond and Whiting, Indiana), IT's contracted local clinic, is to provide this service as well as to treat injuries that occur on the job that are not handled at the site as first aid or treated as an emergency hospital visit. Any employee or contractor who develops a lost-time illness or sustains a lost-time injury will be reexamined by an IT physician. The physician will certify that the employee is fit to return to work before his employment on site can continue. Any physical activity that should be restricted based on the physician's evaluation is to be noted on the proper form (Figure 7).

In the event of any injury or accident, a "Supervisor's Employee Injury Report" (Figure 8) shall be completed as soon as practical by a supervisor after the event. This shall be reviewed by the Project Manager and the SSO.

6.6.3 Medical Records

All medical surveillance records shall be maintained for a period of 30 years and shall be available as required by state and/or local regulations; namely 29 CFR 1910.20 (a)-(e) and (g)-(i).

6.7 PERSONNEL PROTECTION EQUIPMENT

Employees providing support services not in the Exclusion Zones (i.e., decontamination, sample collection support) shall be equipped with Level C protection, which includes the following:

- o Full-face, air-purifying respirator with GMC-type cartridges and prefilter (MSHA/NIOSH approved) for organic vapors, chlorine, formaldehyde, hydrogen chloride, and sulfur dioxide
- o Polycoated tyvek coveralls (hooded) - Sleeves taped to gloves, legs taped to boots
- o PVC outer gloves
- o Surgical-type inner gloves
- o Hard hat
- o Rubber boots with steel toe and shank
- o Outer boot covers (chemical protective throw-aways)
- o Escape mask (ELSA).

Employees who are involved in the actual removal, transfer of materials, tank cleaning, and sample collection support shall be equipped with Level B protection as prescribed below:

- o Positive pressure SCBA
- o Sigal guardian suits (with tape up)
- o PVC or neoprene outer gloves
- o Surgical-type inner gloves

6.8.2 Decontamination Zone

This zone includes the areas immediately surrounding the Exclusion Zone. This shall occur at the interface of the Exclusion Zone and the Support Zone and shall provide for the decontamination of equipment and personnel before crossing into the Support Zone.

6.8.3 Support Zone

This zone covers all areas outside of the Decontamination Zone. This area is considered to have no significant air, water, or soil contamination. The Support Zone provides a changing area for personnel entering the Decontamination and Exclusion Zones.

6.9 DECONTAMINATION PROCEDURES

6.9.1 Personnel Decontamination

Upon leaving the Exclusion Zone, personnel shall:

- o Wash and rinse outersuit, respirator, gloves, and boots
- o Untape mask, ankles, and wrist
- o Remove outersuit, gloves, boot covers, and hard hat
- o Wash and rinse inner gloves and boots
- o Remove respirator, inner gloves, and inner boots
- o Remove inner clothing in decontamination trailer, shower, and redress.

The SCBA will be disconnected from the regulator at the upwind (identified by a flag) edge of the Exclusion Zone. Personnel will then connect to a MSA an acid gas/ organic vapor/HEPA filter canister that is MSHA/NIOSH approved in order to move through the Level C zone and initial decontamination procedures. The Sigel suits will be scrubbed down with detergent and rinsed for reuse before each break and at the end of each shift. New outer gloves and boot covers will be worn after each break.

The break area will be in the Decontamination Zone next to the shower trailer. All outer protective equipment shall be decontaminated before removal for a break. Drinking will be permitted in this area only after hands and face have been washed. Eating and smoking is only permitted in the Support Zone. Showers are required by all personnel working in Level B and C prior to entering the Support Zone.

6.9.2 Equipment Decontamination

All equipment used in the project operations on site shall be cleaned in the decontamination area before removal to the Support Zone. Protective equipment such as respirator facepieces will be decontaminated at the end of the shift. The heavy equipment will be steam cleaned on the truck decontamination pad before removal to the Support Zone. Monitoring equipment, e.g., Hnu meter (photo-ionization meter), HCN monitor, etc., will be protected from contamination to the extent practical by plastic bags. Exposed parts will be cleaned with wet cloths and alcohol wipes.

6.9.3 Waste Disposal

Decontamination water and protective clothing will be stored in drums on site and disposed of during the project.

6.10 WORK ACTIVITIES

Personnel involved in tank cleaning, material transfer or treatment, or sample collection will use Level B personnel protection specified in Section 6.7.

Tanks which will undergo removal and cleaning operations will initially be accessed from a roof or manway above the liquid level of the tank. Personnel shall gain access to this point with a (hydraulic type) aerial lift bucket. Use of an extension ladder may be approved on a case-by-case basis by the SIH.

All employees working at elevated locations (above four feet from the ground) shall be equipped with lifeline and Class II harness (chest type). These employees may also be equipped with two-way radios and use hand signals to communicate with the SIH and other site personnel. Tank clean-up will consist of the procedures outlined in Section 4.0 and summarized below:

- Evacuation of liquids
- Washdown and slurry
- Sludge/dreg removal
- Decontamination of the Tower.

It is expected that project personnel will not enter a tank during any clean-up activity; thus a level A (confined space) situation is not anticipated. If sludge/dreg remains after an initial rinsing then access to this material must be gained for its removal. It is assumed personnel can obtain access for proper removal by cutting entry portals in the tanks eliminating confined space entry.

6.11 AIR MONITORING

Air monitoring will be performed during all phases of the project. As HCN gas is of primary concern to personnel, at least two MDA Computer Model 4100 HCN monitors will be kept and utilized on-site. These monitoring devices may be attached directly to site personnel to monitor worker exposure during the various work functions or used for area monitoring purposes. The HCN monitors are set to alarm at a HCN concentration of 10 ppm. In addition, they have the following cross sensitivities and will alarm at the 10 ppm set point:

CONCENTRATION IN AIR		METER READOUT
H_2S	2 ppm	10 ppm
Chlorine	10 ppm	5 ppm
HCl	10 ppm	7 ppm
Phosgene	10 ppm	5 ppm

If alarms are sounded, Draeger tubes for HCN and H_2S will be used for additional air monitoring. Based on results of this air testing, the SIH may decide to upgrade the level of protection.

Area air monitoring will also be conducted with direct reading instruments for explosive limits, oxygen, and volatile organic compounds (VOCs). Monitoring for explosive limits and oxygen deficiency is to be conducted using MSA 260, GasTech 1314 or equivalent combustible gas/oxygen meters. Monitoring for VOCs is to be conducted using HNu PI101 or Organic Vapor Analyzer (OVA). Additional Draeger Tubes (i.e., methylene chloride) will be kept on-site and used as needed.

Where tank cutting is involved, air monitoring will be conducted to comply with IT's Hot Work Permit.

7.0 EMERGENCY CONTINGENCY AND RESPONSE PLAN (ECRP)

7.1 SCOPE OF WORK

The Health and Safety Plan for the CCCI site has been established to allow site operations to be conducted in order to minimize hazardous health impacts on employee and community health and safety. In addition, this Emergency Contingency and Response Plan (ECRP) has been developed to cover extraordinary conditions that might occur at the site.

All accidents and unusual events will be dealt with in a manner to minimize health risk to site workers and the surrounding community. In the event of an accident or other unusual event, the following procedures will be followed:

- o First aid and other appropriate initial action will be administered by properly trained personnel closest to the incident. This assistance will be conducted in a manner to assure that those rendering assistance are not placed in a situation of unacceptable risk.
- o All incidents will be reported ~~to~~ and documented by the designated Emergency Coordinator, who is responsible for coordinating the emergency response in an efficient, rapid, and safe manner. The Emergency Coordinator will decide if off-site assistance, medical treatment, or both is required and arrange for such assistance. The Emergency Coordinator will ensure that adequate emergency equipment will be available on site.
- o All workers on site are responsible to conduct themselves in a mature, calm manner in the event of an accident or unusual event. All personnel must conduct themselves in a manner to avoid spreading danger to themselves, surrounding workers, or the community in general.

The site Project Manager will administer site security during activation of the ECRP.

7.2 RESPONSIBILITIES

7.2.1 Emergency Coordinator

The site Project Manager is responsible for field implementation of the ECRP. This person has training and experience in emergency response. As the Emergency Coordinator, specific duties include:

- Communicating site ECRP requirements to all personnel, whether directly involved in emergency response or not
- Specifying a backup alternate (most likely the SIH)
- Purchasing supplies as necessary
- Controlling activities of subcontractors and respond to outside agencies
- Anticipating, identifying, assessing, and controlling fires, explosions, chemical releases, and other emergency situations.

7.2.2 Safety Coordinator (SIH)

The SIH is responsible for:

- Establishing health and safety procedures
- Conducting preproject training
- Directing the safety technician
- Monitoring during project start-up.

He will make advance arrangements with appropriate support groups and alert them to the site hazards and types of emergencies that may arise. As the Safety Coordinator, specific duties include:

- Providing a map of the site location and define the ingress routes
- Determining response time and adequacy of emergency support services
- Identifying backup medical and emergency facilities
- Providing training and information about hazards on site and special handling procedures
- Establishing personal contact with each designated agency. This includes on-site training for appropriate response agencies. Table 5 contains a list of off-site support agencies and groups.

7.2.3 IT and Subcontractor Employees

All on-site personnel, whether involved in emergency response or not, will be notified of their responsibilities in an emergency. They will be familiar with the ECRP and the Emergency Coordinator's authority.

IT's ECRP teams will be trained in decontamination, response, rescue, and hazard containment. These teams will be American Red Cross-certified (or equivalent) in cardiopulminary resuscitation (CPR) and emergency first aid.

7.3 EMERGENCY EQUIPMENT

In the event of an emergency, equipment will be available to rescue and treat victims, protect response personnel, and mitigate hazardous conditions on site. This equipment will be stored at a secure location (e.g., the Administration trailer) and away from sources of contamination until it is needed.

7.3.1 Personal Protection

Personal protective equipment will include:

- Neoprene boots
- Sigal Guardian suits
- Tyvek suits - polyethylene coated and uncoated
- Neoprene and nitrile gloves
- Face shields and goggles
- Self-contained breathing apparatus (SCBA)
- Full-face chemical cartridge respirators with cartridges for organic vapors and dust.

7.3.2 Medical

Emergency first aid equipment will include:

- Splints
- Antiseptics
- Blankets
- Decontamination solutions appropriate for on-site chemical hazards
- Emergency eye wash
- Emergency showers or wash stations
- Cold packs

- Reference books containing basic first aid procedures and information on treatment of specific chemical injuries
- Stretchers
- Water, in portable containers
- Emetic agent to induce vomiting
- Antibacterial ointments
- Bandage materials.

7.3.3 Hazard Mitigation

Hazard mitigation equipment will be stored in a spill control equipment locker, and is to be used in the physical containment of any released hazardous constituents. This equipment will include:

- Containers to hold contaminated materials, i.e., 55-gallon drums
- Visqueen
- Sorbent material and booms for both liquids and oils
- "Dike and Plug" or similar material for patching tanks
- "Water Bug" or similar type pump for collection of liquids
- Shovels - wooden handle, steel type.

7.4 COMMUNICATION AND NOTIFICATION

7.4.1 Communications

The primary internal communication system will rely on radio communications between site trailer and site personnel. Hand signals will be used as a backup should radio communications fail.

External communications will employ stationary phones housed in the site trailer. Personnel will be familiar with protocol for contacting support groups and agencies identified in the ECRP. Emergency numbers will be placed in company vehicles and at strategic locations throughout the site.

7.4.2 Site Maps

7.4.2.1 Assembly Area

A site evacuation area will be designated before job start-up and will be located upwind of the prevailing wind. Here, emergency needs will be provided such as:

- o Assembly for evacuated site personnel
- o First aid for injured personnel
- o Decontamination material
- o Communications.

7.4.2.2 Emergency Services Route Maps

An emergency services route map will be prepared and located in company vehicles, posted with the emergency number list (Table 5) on site, and distributed to support groups and agencies for:

- o St. Catherine Hospital
- o Local IT-selected clinic (The Whiting Clinic)
- o City police department
- o Fire department.

All maps will be used in training sessions and in emergency response planning. Practice "runs" will be made along all emergency service routes by supervisory personnel.

7.4.3 Notification

If the Emergency Coordinator determines that the site has an uncontrolled situation such as a spill, fire, or explosion which could threaten public health or the environment, he will report his findings as follows:

- o Alert site personnel via radio.

- o If his assessment indicates that evacuation of the work area may be advisable, he will immediately initiate the evacuation notice, stop the operation, and notify one person from each organization of the appropriate authorities listed in Table 5. He will be available to help appropriate officials decide whether adjacent areas should be evacuated.

- In the event normal communication lines fail, a backup communication system will be activated. This system (e.g., a Citizen's Band radio or mobile telephone) will be able to access the appropriate emergency service providers.

The notification report will be made from the site trailer to the appropriate support groups and will include:

- Description of incident (e.g., release, fire)
- Name and telephone number of reporter
- Name and address of incident
- Name and quantity of materials or material involved to the extent known
- The extent of injuries, if any
- The possible hazards to human health or the environment, and cleanup procedures
- Assistance that is requested.

7.5 EMERGENCY PROCEDURES

Potential incidents fall under four general classifications: (1) fire or explosions; (2) chemical releases to the atmosphere, soil, or surface waters; (3) severe weather conditions such as tornado and lightning storms; and (4) worker injury or illnesses. The following sequence of events constitute the specific responses and control procedures to be taken in the event of these four incident scenarios.

The initial response to any emergency will be to protect human health and safety, and then the environment. Secondary response to the emergency will be identification, containment, treatment, and disposal assessment.

7.5.1 Hazard Assessment

The Emergency Coordinator in consultation with the SIH will assess possible hazards to human health or the environment that may result from the chemical release, fire, explosion, or severe weather conditions. The Emergency Coordinator will assess the hazards posed by an incident through the following steps, as appropriate:

- o Assess immediate need to protect human health and safety
- o Identify the materials involved in the incident
- o Identify exposure and/or release pathways and the quantities of materials involved
- o Determine the potential effects of exposure/release, and appropriate safety precautions.

This assessment will consider both the direct and indirect effects of the chemical release, fire, explosion, or severe weather conditions (e.g., the effects of any toxic, irritating, or asphyxiating gases that are generated, or the effects of any hazardous surface water runoff from water or chemical agents used to control fire and heat-induced explosions).

Based on this assessment, the Emergency Coordinator will determine what risks are posed to employees and community populations. If the incident cannot be controlled by operating personnel without incurring undue risk, the Emergency Coordinator will order the evacuation of all workers at risk and notify appropriate parties listed in Table 5 of the situation and the assistance required. If the Emergency Coordinator determines that any persons outside the site are at risk as a result of the incident, he will contact the appropriate agencies and departments listed in Table 5 and advise them of the risk and the need or potential need to institute off-site evacuation procedures.

7.5.2 Fire and Explosion

When fire or explosion appear imminent or have occurred, all project activities will cease.

The Emergency Coordinator will assess the severity of the situation and decide whether the emergency event is or is not readily controllable with existing fire suppression equipment on hand. Firefighting will not be done if the risk to operating personnel appears high. The Station No. 1 Fire Department will be called in all situations in which fires or explosions have occurred.

If the situation appears uncontrollable, and poses a direct threat to human life or the environment, a warning will be administered to all personnel to secure their emergency equipment. If the chances of an impending explosion are high, the entire site will be evacuated.

The Emergency Coordinator will alert all personnel when all danger has passed, as determined by the fire department.

Situations which will activate notification of other emergency contacts are:

- o A fire causes or could cause the release of toxic fumes
- o The fire spreads and could possibly ignite nearby fuel oil or other liquid wastes, or could cause heat-induced explosions
- o The fire could possibly spread to off-site areas
- o Use of fire extinguishers and suppressants does not result in fire contaminant
- o An imminent danger exists that an explosion could occur, causing a safety or health hazard
- o An imminent danger exists that an explosion could ignite other hazardous waste at the facility
- o An imminent danger exists that an explosion could result in release of toxic materials
- o An explosion has occurred.

7.5.3 Chemical Release

If a chemical release resulting in probable vapor cloud is noted, the information will be immediately relayed to the Emergency Coordinator. The Emergency Coordinator in consultation with the SIH will assess the magnitude and potential seriousness of the release by reviewing the following information:

- Material safety data sheets (MSDS) for the material released
- Source of the release
- An estimate of the quantity released and the rate at which it is being released
- The direction in which the air release is moving
- Personnel who may be or may have been in contact with material, or air release, and possible injury or sickness as a result
- Potential for fire or explosion resulting from the situation
- Estimates of area under influence of release.

If the release is determined to lie within the on-site emergency response capabilities, the Emergency Coordinator will implement the appropriate action.

If the incident results in chemical concentrations at the site perimeter exceeding the action levels specified in the Health and Safety Plan, the Emergency Coordinator will notify the appropriate support agencies. The Emergency Coordinator may elect to make immediate notification if conditions warrant. In the event of an emergency release, all personnel not involved with emergency response activity will be evacuated from the immediate area.

MSDS forms will be consulted in the event of a chemical release to air, land, or water.

7.5.4 Natural Disaster

When a tornado warning has been issued or when a lightning storm occurs (within a five-mile radius of the site), the information will be immediately relayed to the Emergency Coordinator in the Support Area and all personnel shall stand by for emergency procedures. In the case of a tornado siting, personnel shall institute shutdown procedures and lie down in a depression. When a storm passes, the Emergency Coordinator will inspect all of the on-site equipment to ensure its readiness for operation. If any equipment has been damaged, the work will not be restarted until the equipment has been repaired or replaced.

If the Emergency Coordinator's inspection indicates a fire, explosion, or release has occurred as the result of a severe weather condition, he will follow the appropriate procedures in Sections 7.5.2 or 7.5.3.

7.5.5 Security

During activation of the ECRP, the Emergency Coordinator or his designated representative, will control access to the site and maintain a security incident log which will include:

- Time of entry
- Expected exit time
- Use of team or "buddy" system
- Task being performed
- Location of task
- Rescue and response equipment used
- Protective equipment being used.

7.5.6 Medical Treatment/Accident

Selected on-site emergency personnel will be trained:

- In on-the-spot first aid and CPR treatment techniques
- To establish contact with medical experts
- To establish liaisons with local emergency response support agencies.

Program elements will include as a minimum:

- Establishing liaison with local medical personnel, for example: contracted physician, medical specialists, local hospitals, ambulance service, and poison control center. Inform and educate these personnel about site-specific hazards so that they can be optimally helpful if an emergency occurs. Develop procedures for contacting them; familiarize all on-site emergency personnel with these procedures.
- Setting up on-site emergency first aid stations; see that they are well supplied and restocked immediately after each emergency.

7.5.7 Follow-up and Reentry

Before normal operations are resumed, the Emergency Coordinator will see that another emergency can be handled by:

- Assuring all appropriate notifications were made
- Restocking all equipment and supplies
- Clean, refuel, and repair all additional equipment
- Review and revise all aspects of the ECRP.

In addition, the Emergency Coordinator will verify that ambient concentrations of toxic chemicals are below limits generally recognized as safe.

7.6 TRAINING

In addition to the preproject training outlined in the Health and Safety Plan, specific emergency response training will:

- Relate directly to site-specific, anticipated situations
- Be repeated often in "tailgate" sessions
- Provide for an evacuation drill
- Ensure that training records are maintained.

Visitors will be briefed on basic emergency procedures such as decontamination, emergency signals, and evacuation routes.

Personnel without defined emergency response roles (e.g., contractors, federal agency representatives) must still receive a level of training that includes at a minimum:

- Hazard recognition
- Standard operating procedures
- Signaling an emergency: the radio signals used, how to summon help, what information to give and who to give it to

- o Evacuation routes and assembly area
- o The person or station to report to when the ECRP is activated.

IT personnel will have a thorough understanding of the ECRP. Training will be directly related to their specific roles and will include:

- o Emergency chain-of-command
- o Communication methods and signals
- o How to call for help
- o Emergency equipment and its use
- o Emergency evacuation while wearing protective equipment.

APPENDIX N

SITE ASSESSMENT/REMOVAL ACTION PLAN
FOR
CONSERVATION CHEMICAL

U.S. EPA ID: IND040888992
SSID#: Y1
TDD: T05-9311-014
PAN: EIN0047SAA

VOLUME 1 OF 2

ecology and environment, inc.
International Specialists in the Environment

SITE ASSESSMENT/REMOVAL ACTION PLAN
FOR
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VOLUME 1 OF 2

February 2, 1994

Prepared by: John Sherman Date: 2-2-94
Reviewed by: [signature] Date: 2-2-94
Approved by: [signature] Date: 2-2-94

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

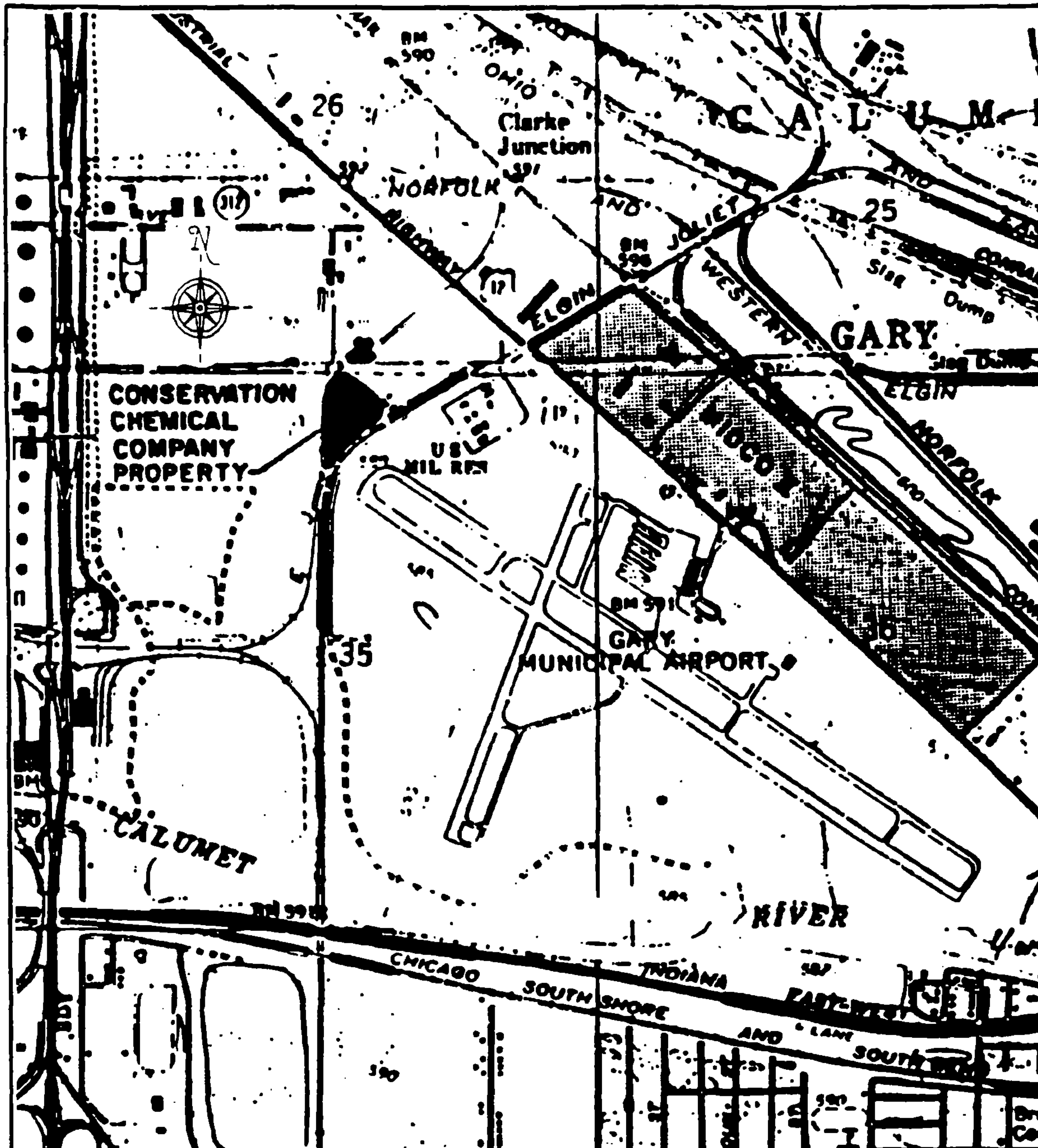
The Ecology and Environment, Inc. (E & E), Technical Assistance Team (TAT) was tasked by the Emergency and Enforcement Response Branch (EERB) of the United States Environmental Protection Agency (U.S. EPA) to conduct a site assessment at the Conservation Chemical site in Gary, Lake County, Indiana, under Technical Directive Document (TDD) number T05-9311-014. The TAT was tasked to develop a health and safety plan; compile a plan to sample the tanks, drums, lagoons, and soils on-site; arrange for an engineering firm to perform an aerial and land survey of the site; and to arrange for a mobile laboratory to provide screening of the soils for polychlorinated biphenyls (PCBs) at the site.

The site assessment was performed in accordance with the National Contingency Plan (NCP), and Paragraph (b) (2) of 40 Code of Federal Regulations (CFR) section 300.415 to evaluate on-site conditions and possible threats to human health, welfare, and the environment. This report summarizes these activities.

2.0 SITE BACKGROUND

The Conservation Chemical (CC) site is located at latitude 41°37'28" and longitude 87°25'10" in the NE¼ of Section 35, Township 37, Range 9 and the SE¼ of Section 26, Township 37, Range 9, at 6500 Industrial Highway (U.S. Route 12) in Gary, Lake County, Indiana (See Figure 1, Site Location Map). The triangle-shaped, 4.1-acre site is located in a predominately industrial area. The site is bordered on the northeast by the Western Scrap Superfund site, on the southeast by the Gary Airport, and on the south and west by a spur of the Elgin, Joliet and Eastern railroad. Topography is relatively flat ranging from an elevation of 595 feet in the southern "pie-shaped" basin to 590 feet along the northeast boundary. The surrounding surface water drainage is southward toward the marshlands located directly south of the site. The original soils at the site were fine grained sands interbedded with discontinuous clay lenses. However, a significant amount of fill material has been added. The shallow unconfined Calumet aquifer is generally located within 10 feet of the surface. The flow of groundwater is to the south-southwest toward the Grand Calumet River.

Prior to 1967, the CC site was owned by Berry Oil Company which operated an oil refinery at the site. Many of the storage tanks and drums used by CC were left by Berry Oil and have been utilized by CC. Other remnants of the oil refinery operation still on-site include the office/shop building, two acid lagoon-pit areas, two-concrete lined pits, a distillation column, and a forced-draft cooling tower. Also remaining is a "pie-shaped" basin at the southern apex of the site that may have been part of a wastewater treatment and disposal system for the refineries.



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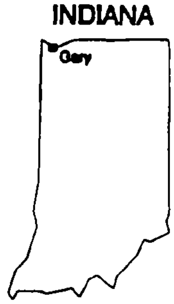


ecology and environment, inc.
Technical Assistance Team
Region V

TITLE Site Location Map	FIGURE # 1
SITE Conservation Chemical	TDD# T05-9311-014
CITY Gary STATE Indiana	SCALE None
SOURCE USGS Quadrangle Map	DATE 12-22-93
	REVISED

In 1967, Norman Hjersted purchased the facility to convert industrial wastes into forms which would be acceptable for disposal or reuse. From 1967 to 1975 and from 1980 to 1985, the CC facility stored and treated spent acids, oils, and solvents and also operated as a producer of ferric chloride, which was marketed to wastewater treatment plants as a chemical precipitant for phosphorous removal in activated sludge. The process involved the reaction of ferrous chloride pickling liquor with chlorine and scrap iron to produce ferric chloride. Scrap was added to increase the concentration of ferric chloride to remove the free acidity by conversion to the iron salts. Due to the irregularity and variety of incoming materials, a wide range of processes and treatment techniques were required to effectively handle these materials.

The waste pickling liquor used at the site was generated by the steel mill industry. Pickling lines are used in steel mills to remove scales that form on the metal during the rolling process. Continuous picklers utilize either hydrochloric or sulfuric acid. A ferrous chloride waste product results when hydrochloric acid is used; the scales are dissolved in the acid in the form of ferrous chloride. When the ferrous chloride reaches a concentration of 18 to 20%, the pickling acid is no longer usable. The spent pickling liquor contains free hydrochloric acid, ferrous chloride, and water, as well as small amounts of other impurities.

From 1975 to 1980, the CC facility operated as a hazardous waste terminal and treatment facility for cyanide, organic solvents, plating waste, and waste oils. At that time, the facility's primary method of treatment involved waste neutralization. However, the CC facility was forced into cessation of its hazardous waste processing activities as a direct result of its inability to comply with federal government hazardous waste regulations. Following its abandonment of hazardous waste activities, the company redesigned the plant for reinstatement of its ferric chloride production.

In October 1983, the E & E Field Investigation Team (FIT) installed six monitoring wells on the CC facility under TDD number R05-8307-001.

On October 26, 1983, the Gary Municipal Airport completed its Hazardous Waste Assessment Report at the CC site (See Appendix D - Previous Site Investigation Report). Four monitoring wells were installed and sampled.

In May 1984, after a FIT site investigation (TDD# T05-8404-005), the FIT documented volatile organic compounds (VOCs) and metal contamination in the shallow Calumet aquifer (See Appendix E - Preliminary Sampling Investigation).

On February 8, 1985, the Weston-Sper Technical Assistance Team (TAT) conducted a site assessment (TDD# T05-8502-006) and identified several imminent threats to human health and the environment, including significant amounts of a cyanide sludge material in close proximity to tanks containing acid, creating the potential for a hydrogen cyanide release; and a leaking tank containing a total of 163,000 gallons of PCB-contaminated oil. An acid waste lagoon used for process waste disposal and a "pie-shaped" basin containing hazardous waste was observed by the TAT.

In May 1985, an Emergency Action Plan was submitted by the Weston-Sper TAT to U.S. EPA under TDD number T05-8502-006. The plan included recommended removal actions and costing, which addressed the removal of cyanides, PCBs, solvents, and neutral waste acids (See Appendix F - Emergency Action Plan).

On September 27, 1985, U.S. EPA issued a U.S. EPA Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 106 Administrative Order, which required the potentially responsible party (PRP) to remove and dispose of hazardous waste at the CC site.

On October 4, 1985, a U.S. EPA CERCLA removal action was initiated at the site under Delivery Order number 6894-05-053. The ERCS contractor was PEI, which subcontracted the work to Mid America Environmental Services. The U.S. Environmental Response Team (ERT) collected soil samples in the "pie shaped" basin. (See Appendix G - ERT "Pie-Shaped" Basin Soil Sampling). Results showed elevated levels of heavy metals in the basin.

In December 1985, CC shut down operations due to failure to comply with federal regulations requiring the closure of surface impoundments.

From June 1987 to February 1988, the Respondents of the original September 1985 106 Administrative Order as supplemented, conducted removal activities at the CC facility. These activities included the construction of a fence, removal of acid and cyanide liquids and dregs for off-site treatment and disposal, removal of Tank #20 sludges for off-site disposal, and securing of empty tanks. Approximately 139,949 gallons of cyanide liquids; 285 drums of cyanide solids; 5,718 gallons of acid liquids; 45 drums of acid solids; 1,507 tons of Tank #20 solids; and 48,700 gallons of Tank #20 filtrate were removed and disposed of off-site. Each of these tanks was stabilized and secured.

In December 1989, Respondents dismantled a cracking tower contaminated with cyanide. The contents were drummed and left on-site.

In January 1990, ERCS solidified the PCB-contaminated material in Tank #22 using 3,037 tons of lime, and staged the material in a pile in an area west of Tank #22.

In March 1990, the Environmental Response Service (ERS) was contracted by the PRPs to drill four monitoring wells around the site. The wells were numbered ERS1 through ERS4 (See Appendix H - ERS Groundwater Investigation Report). O & M Abatement, Hazelcrest, Illinois, arrived on-site to remove the asbestos-containing material stored on-site. PRP contractor oversight by the TAT was conducted under TDD number T05-9003-020 (See Appendix I - Groundwater Monitoring Well Sampling).

On September 6, 1990, U.S. EPA demobilized from the CC facility. Over the course of the removal activities, the following wastes were shipped off-site for disposal: 187,948 gallons of PCB-contaminated oil; 214.78 tons of PCB-contaminated soil; 1,941 gallons of hazardous waste liquid; 60 tons of hazardous waste solids; 15,300 gallons of flammable waste liquid; 112 gallons of flammable waste solid; 1,760 gallons of waste chromic acid; 2,960 gallons of non-hazardous solid; 74 cubic yards of contaminated debris; and 51,600 pounds of silicon tetrachloride ($SiCl_4$).

Until the present, the PRP has assumed responsibility for removal procedures, but nothing has been completed.

3.0 SITE ACTIVITIES

On November 29, 1993, TAT member John Sherrard met with On-Scene Coordinator (OSC) Steve Faryan at the CC site. The TAT and OSC performed a site walk-through and observed numerous uncontrolled drums, tanks, scrap metal, and orange-colored soil in the lagoon/pit areas and "pie-shaped" basin. The TAT also observed numerous broken windows and other signs of vandalism in the buildings and that a large portion of the existing fence was stolen. Five lab packs containing various lab chemicals were located inside the shop building. The OSC requested that the TAT organize an extensive sampling plan as well as arrange for mobilization of a mobile laboratory to perform PCB analysis on soils using the gas chromatograph (GC), to assess the hazards of the facility. The OSC also informed the TAT of the need for a land/aerial survey of the site. Sampling events were tentatively scheduled for the second week in December.

On December 13, 1993, TAT members John Sherrard, Yvette Anderson, and Brad Stimple met with OSC Steve Faryan at the CC site. The first objective of the day was for the TAT to perform a site walk-through to determine the number of drums and tanks, with their corresponding volumes, that still remained on-site from the previous removal. Approximately 325 drums (175 drums containing product and 150 empty drums) and 50 tanks (11 tanks containing product and 39 empty tanks) still remain on-site (see Figure 2 - Site Features Map). All the tanks and drums that were empty were marked by the TAT with the letters "MT". The TAT also observed numerous piles of scrap metal and cut-up tanks around the site. All of the tanks that were empty had previously been decommissioned (hole cut).

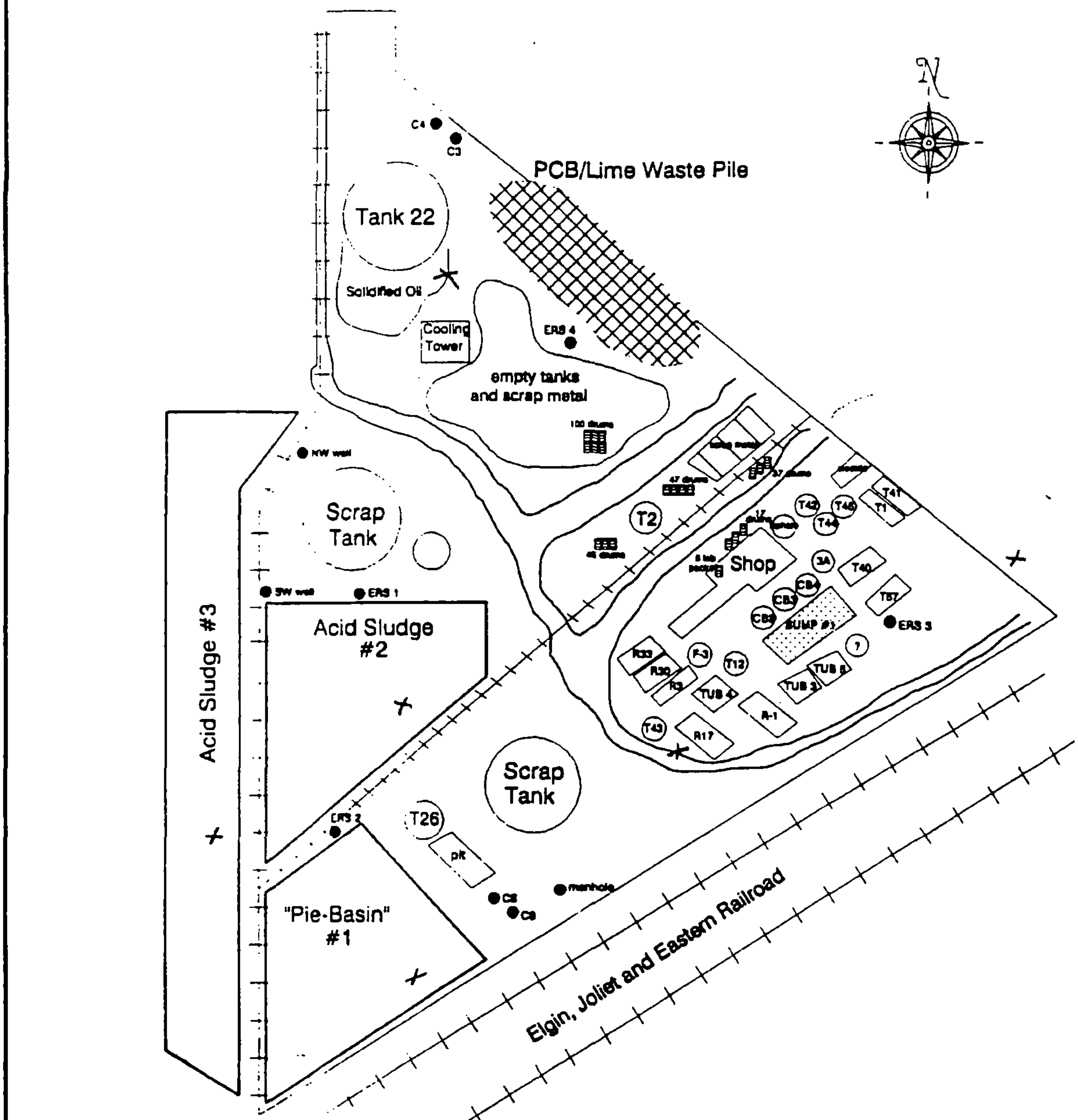
The second objective of the day was to collect soil samples of the lagoon/pit areas and from the PCB/lime waste pile. The TAT collected two soil samples from the "pie-shaped" basin (LP1-SS2 and LP1-SA1), two soil samples from acid-sludge pit #2 (LP2-SA1 and LP2-SA2), one soil sample from acid-sludge pit #3 (LP3-SS1), and three soil samples from the PCB waste pile (WP1 through WP3). See Table 1 for a description of the samples collected and Figure 3 - Site Sampling Location Map.

On December 14, 1993, TAT members Sherrard, Anderson, and Stimple met with OSC Faryan to collect tank and additional soil samples. The TAT collected three soil samples (S-1 through S-3), six tank samples (T1 through T6), and one sludge sample (P-1). See Table 1 for a description of the samples collected and Figure 3 - Site Sampling Location Map. Samples from December 13 and 14 were hand delivered by the TAT to EMS Heritage Laboratory, 1319 Marquette Drive, Romeoville, Illinois, 60441, under Chain of Custody (COC) #5-22675.

On December 15, 1993, TAT members Sherrard, Anderson, and Stimple met with OSC Faryan to collect drum samples and additional tank and soil samples. The TAT collected one soil sample (S-4), six tank samples (T7 through T12), and two drum samples (DS1 and DS2). See Table 1 for a description of the samples collected and Figure 3 - Site Sampling Location Map. The TAT also collected an additional 15 samples to be analyzed for PCBs by a TAT chemist using mobile laboratory equipment.

On December 16, 1993, TAT members Sherrard, Anderson, and Stimple arrived at the CC site to collect one asbestos sample (A-1) and one tank sample (T13). See Table 1 for a description of the samples collected and Figure 3 - Site Sampling Location Map. Samples from December 15 and 16 were hand delivered by TAT to EMS Heritage Laboratory under COC #5-22679.

Seven additional samples were collected and sent to EA Engineering, 19 Loveton Circle, Sparks, Massachusetts, 21152, under the Quick Turnaround Method (QTM - case #Q0106) laboratory with U.S. EPA under COC #Q-001240. The QTM is a new program initiated by the U.S. EPA and was used as an analytical check with the contracted laboratory. Table 2 describes the QTM samples collected with each individual analysis and Table 3 gives the corresponding analytical results of the QTM samples.



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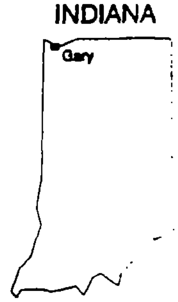

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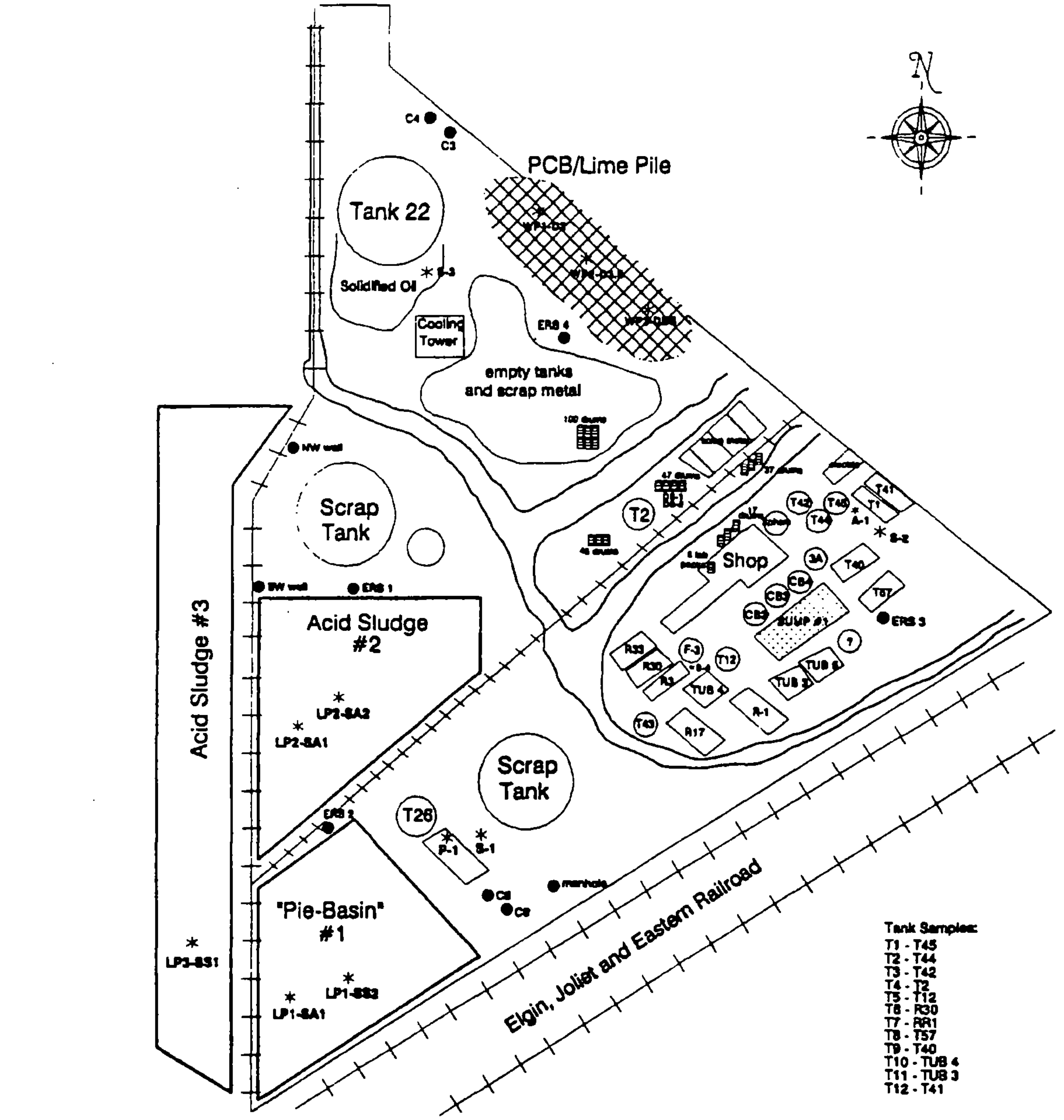
TITLE Site Features Map	FIGURE # 2
SITE Conservation Chemical	TDD# T05-9311-014
CITY Gary STATE Indiana	SCALE None
SOURCE USGS Quadrangle Map	DATE 12-22-93
	REVISED

TABLE 1

CONSERVATION CHEMICAL SITE
GARY, INDIANA

CONTRACT LAB SAMPLE DESCRIPTIONS

S-1	red-brown soil, surface sample next to pit #1, collected on 12-14-93
S-2	dark brown soil, surface sample next to tank #1 where old transformer was located, collected on 12-14-93
S-3	dark brown soil, surface sample next to tank #22 and the solidified oil, collected on 12-14-93
S-4	brown soil, surface composite sample around tub #4 and tank #12, collected on 12-15-93
P-1	red-brown, grey sludge collected from the bottom of pit #1 on 12-14-93
WP1	brown solid, collected at a 2' depth in PCB/lime waste pile on 12-13-93
WP2	black sludge, collected at 3.5' depth in PCB/lime waste pile on 12-13-93
WP3	brown soil, collected at the surface from the PCB/lime waste pile on 12-13-93
LP1-SA1	red-brown soil collected at a 2' depth from "pie-shaped" basin on 12-13-93
LP1-SS2	red-brown soil collected from the surface from "pie-shaped" basin on 12-13-93
LP2-SA1	red-brown soil collected from a 2' depth from acid sludge pit #2 on 12-13-93
LP2-SA2	duplicate of LP2-SA1
LP3-SS1	red-brown soil collected from the surface from acid sludge pit #3 on 12-13-93
T1	light yellow liquid from tank #45 (full), field pH = 13, collected on 12-14-93
T2	brown liquid from tank #44 (full), field pH = 1-2, collected on 12-14-93
T3	light yellow liquid from tank #42 (full), field pH = 1-2, collected on 12-14-93
T4	red-brown liquid from tank #2 (full), collected on 12-14-93
T5	brown-black solid from tank #12 (1/16 full), collected on 12-14-93
T6	yellow liquid from tank R-30 (full), field pH = 0-1, collected on 12-14-93
T7	brown liquid from tank RR1 (1/2 full), field pH = 1-2, collected on 12-15-93
T8	light-yellow liquid from tanker #57 (full), field pH = 12, collected on 12-15-93
T9	yellow liquid from tank #40 (full), field pH = 1-2, collected on 12-15-93
T10	yellow liquid from tub #4 (full), field pH = 1-2, collected on 12-15-93
T11	yellow liquid from tub #3 (full), field pH = 1-2, collected on 12-15-93
T12	brown liquid from tank #41 (1/8 full), field pH = 0-1, collected on 12-15-93
T13	distilled water blank
DS1	brownish sludge drum sample, field pH = 12, collected on 12-15-93
DS2	brownish sludge drum sample, collected on 12-15-93
A-1	white solid, possibly asbestos from bags under tank #1, collected on 12-16-93



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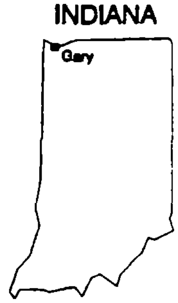

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TITLE Site Sampling Location Map — FIGURE # 3

SITE Conservation Chemical — TDD# T05-9311-014

CITY Gary — STATE Indiana — SCALE None

SOURCE USGS Quadrangle Map — DATE 12-22-93 — REVISED

TABLE 2

CONSERVATION CHEMICAL
GARY, INDIANA

QTM SAMPLE DESCRIPTIONS

Field ID#	Lab ID#	Description	Analysis
T5	QE0013	solid from tank #12	PCB, PAH
WP1	QE0014	solid from PCB/lime waste pile	PCB, PAH
WP2	QE0015	solid from PCB/lime waste pile	PCB, PAH
LP1	QE0016	soil from "pie-basin"	PCB, PAH
LP2	QE0017	soil from acid-sludge pit #2	PCB, PAH
P-1	QE0018	sludge from pit #1	PCB,PAH,VOA
S-5	QE0019	soil from railroad tracks	PCB, PAH

TABLE 3

CONSERVATION CHEMICAL
GARY, INDIANA

QTM ANALYTICAL RESULTS

Analytes	T5 QE0013	WP1 QE0014	WP2 QE0015	LP1 QE0016	LP2 QE0017	P-1 QE0018	S-5 QE0019
Non-Carcinogen PAHs							
Naphthalene	0.33	5.8	3.2	0.29	0.33	1	0.05
Benzo(g,h,i)perylene	0.33	2.6	1.5	3.8	0.33	0.33	0.33
Acenaphthylene	0.33	30	45	3.1	0.33	0.19	0.04
Acenaphthene	0.07	75	54	5.4	0.33	0.69	0.33
Fluorene	0.17	110	87	16	0.33	1.1	0.09
Phenanthrene	0.5	110	78	49	0.33	1.9	0.35
Anthracene	0.27	67	65	>160	0.33	0.63	0.25
Pyrene	0.33	86	72	>200	0.4	2	0.8
Fluoranthene	0.5	62	56	>45	0.41	3.4	0.83
SUB-TOTAL	3	548	462	>483	4	12	4
Carcinogen PAHs							
Benzo(a)anthracene	0.33	18	14	>38	0.33	0.08	0.13
Chrysene	0.03	25	21	>65	0.24	0.36	0.49
Benzo(b,k)fluoranthene	0.33	15	26	13	0.33	0.33	0.31
Benzo(a)pyrene	0.33	9.9	4.9	8.1	0.33	0.57	0.06
Ideno(1,2,3-cd)pyrene	0.33	0.33	3	2.3	0.33	0.33	0.22
Dibenzo(a,h)anthracene	0.33	1.5	---	2.8	0.33	0.33	0.33
SUB-TOTAL	2	70	69	>130	2	2	1.5
PCBs							
PCB Total	0.22	14.9	14.3	7.1	2.4	0.7	0.6
Volatile Organics	NA	NA	NA	NA	NA		NA
Vinyl Chloride						0.74	
1,1-Dichloroethene						>76	
Trans-1,2-Dichloroethene						4.7	
1,1-Dichloroethane						>55	
Chloroform						2.4	
1,1,1-Trichloroethane						720	
Carbon Tetrachloride						0.4	
Benzene						12	
1,2-Dichloroethane						>39	
Trichloroethene						650	
Bromodichloromethane						0.4	
Toluene						>630	
Tetrachloroethene						>330	
Chlorobenzene						3.6	
1,1,2,2-Tetrachloroethane						0.4	
Ethylbenzene						>160	
Bromoform						0.4	
M,P-Xylene						>420	
O-Xylene						>150	

* All concentrations are given in parts per million (ppm)
NA = sample not analyzed for this parameter

All soil samples collected on site were collected in Level D personal protection. Sampling gloves were changed before each sample was collected. Sampling equipment was either disposed after one use or decontaminated after each sample, using an Alconox solution. All personal protective equipment (PPE) was collected in empty drums and left on-site. Photodocumentation of each sample was performed and can be found in Appendix A.

4.0 ANALYTICAL RESULTS

Analytical results were collected by the TAT from two drums, twelve tanks, one pit, three waste pile samples, nine soil samples, and one asbestos sample. A complete listing of analytical results can be found in Table 4. The analytical results of the PCB screening using the GC and each respective sample description can be found in Table 5.

Various concentrations of volatile and semi-volatile analytes (VOAs and SVOAs) were detected. Most notable VOA results were the presence of acetone detected at 5,400,000 micrograms per kilogram (μg/kg) in T4; 1,1,1-trichloroethane at 720,000 μg/kg in P-1; dichloromethane at 590,000 μg/kg in T4; and greater than 630,000 μg/kg of toluene in QE0018 (P-1); isophorone from 380,000 μg/kg in DS-2 and 780,000 μg/kg in DS-1; and trichloroethene at 650,000 μg/l in QE0018 (see Appendix B for complete validated analytical results).

Results of the Toxicity Characteristic Leaching Procedure (TCLP) metals analysis indicated the presence of chromium at 23 milligrams per liter (mg/l) to 32 mg/l in the two samples collected from the material in the "pie-shaped" basin (LP1-SS2 and LP1-SA1).

Sample T4 recorded a flash point of 65°F, which, according to 40 CFR Section 261.21, is considered a Resource Conservation and Recovery Act (RCRA) characteristic hazardous waste by virtue of ignitability (flash point of less than 140°F).

Sample A-1 tested positive for asbestos with an amosite asbestos result of 45%.

Various concentrations of PCBs were detected in most of the soil samples and waste pile samples. The highest concentrations detected were 33.8 mg/kg in sample WP2 and 31.3 mg/kg in sample WP3.

Samples T2, T3, T5 through T7, and T9 through T12 all had pH readings below 2, and samples T1 and T8 had pH readings above 13, which, according to 40 CFR Section 261.22, is considered a RCRA characteristic hazardous waste by virtue of corrosivity (pH less than or equal to 2 or greater than or equal to 12.5). All three

(7)

TABLE 4

CONSERVATION CHEMICAL SITE
GARY, INDIANA

CONTRACT LAB ANALYTICAL RESULTS

Analytes	LP1-SS2	LP1-SA1	LP2-SA1	LP2-SA2	LP3-SS1	WP1	WP2	WP3	S-1	S-2	S-3	S-4
pH	4.3	6.1	6.8	7.0	4.8	12	12	11	5.2	8.2	NA	6.8
PCBs	3.4	22.7	16.9	BDL	BDL	10.5	33.8	31.3	1.4	BDL	23.7	BDL
TCLP RCRA Metals												
Barium (100ppm)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	3.5	BDL	BDL	14
Cadmium (1 ppm)	0.31	0.56	0.26	0.26	BDL	BDL	BDL	0.02	BDL	BDL	BDL	BDL
Chromium(5 ppm)	23	32	0.17	0.23	BDL	0.11	BDL	0.19	0.37	BDL	0.11	BDL
Lead (5 ppm)	0.3	BDL	BDL	BDL	BDL	0.36	BDL	BDL	BDL	BDL	BDL	BDL
Silver (5 ppm)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.1	BDL	BDL	BDL
Arsenic (5 ppm)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Selenium(1 ppm)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Mercury(.2 ppm)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Cyanides												
Reactive Cyanide	NA	BDL	NA	NA	NA	NA	NA	NA	BDL	NA	BDL	NA
Total Cyanide	NA	22	NA	NA	NA	NA	NA	NA	13	NA	1.6	NA
SVOAs	BDL	NA	NA	NA	NA		NA	NA	NA	BDL	NA	NA
Phenanthrene						11						

* All concentrations except pH are given in parts per million (ppm).
** BDL = Below Detection Limit NA = sample not analyzed for this parameter
*** See Appendix B for a complete list of SVOAs analyzed.

(continued)

TABLE 4 (continued)

CONSERVATION CHEMICAL
GARY, INDIANA

CONTRACT LAB ANALYTICAL RESULTS

Analytes	T1	T2	T3	T4	T5[2]	T6	T7	T8	T9	T10	T11	T12
pH	>13	1.7	1.9	6[1]	1.2	1.0	1.0	>13	1.0	1.0	2.0	1.0
PCBs	NA	NA	NA	NA	BDL	NA	NA	NA	NA	NA	NA	NA
Total RCRA Metals												
Barium	BDL	BDL	BDL	NA	4.8	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Cadmium	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chromium	BDL	11	14	NA	0.23	2.8	7.7	BDL	BDL	BDL	BDL	32
Lead	BDL	35	30	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	21
Silver	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Arsenic	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Selenium	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Mercury	BDL	BDL	BDL	NA	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Cyanides												
Reactive CN^-	BDL	NA	NA	NA	BDL	NA	NA	NA	NA	NA	NA	NA
Total CN^-	1.1	NA	NA	NA	1.7	NA	NA	NA	NA	NA	NA	NA
Sulfides												
Sulfide	BDL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Incineration Parameters												
Flash Point				65°F								
Btu				BDL								
Total Organic Carbon				29,600 mg/l								
Total Organic Halide				123 mg/l								
SVOAs												
Isophorone	NA	NA	NA	120	NA	NA	NA	NA	NA	NA	NA	NA
Benzoic Acid	NA	NA	NA	12	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	NA	NA	NA	6	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	17	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	NA	NA	NA	14	NA	NA	NA	NA	NA	NA	NA	NA
VOAs												
Acetone	NA	NA	NA	5400	NA	NA	NA	NA	NA	NA	NA	NA
Dichloromethane	NA	NA	NA	590	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	280	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	400	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	130	NA	NA	NA	NA	NA	NA	NA	NA

* All concentrations except pH are given in parts per million (ppm).
** BDL = Below Detection Limit NA = sample not analyzed for this substance
*** See Appendix for a complete list of SVOAs and VOAs analyzed

(1) = Results found from field testing
(2) = TCLP RCRA Metals was analyzed for this solid sample

(continued)

TABLE 4 (continued)

CONSERVATION CHEMICAL
GARY, INDIANA

CONTRACT LAB ANALYTICAL RESULTS

Analytes	T-13	A-1	P-1	DS-1	DS-2
pH	9.2	NA	NA	11	12
PCBs	NA	NA	18	BDL	BDL
TCLP RCRA Metals					
Barium	BDL	NA	BDL	BDL	BDL
Cadmium	BDL	NA	0.31	1.7	0.07
Chromium	BDL	NA	0.42	0.09	BDL
Lead	BDL	NA	BDL	BDL	BDL
Silver	BDL	NA	0.08	0.11	BDL
Arsenic	BDL	NA	BDL	BDL	BDL
Selenium	BDL	NA	BDL	BDL	BDL
Mercury	BDL	NA	BDL	0.21	0.006
Cyanides					
Reactive CN^-	NA	NA	11	3.8	BDL
Total CN	NA	NA	240	530	110
Asbestos					
Amosite Asbestos	NA	45%	NA	NA	NA
Cellulose	NA	5%	NA	NA	NA
Synthetics/Hair	NA	<1%	NA	NA	NA
Binder	NA	50%	NA	NA	NA
Result	NA	POS	NA	NA	NA
SVOAs					
Acenaphthene	NA	NA	BDL	19	11
Bis(2-ethylhexyl)phthalate	NA	NA	11	50	27
Dibenzofuran	NA	NA	BDL	BDL	9.3
1,2-Dichlorobenzene	NA	NA	28	150	100
Fluoranthene	NA	NA	BDL	35	20
Fluorene	NA	NA	BDL	27	16
Isophorone	NA	NA	44	780	380
2-Methylnaphthalene	NA	NA	25	95	70
Naphthalene	NA	NA	23	120	82
Phenanthrene	NA	NA	18	80	47
Pyrene	NA	NA	BDL	43	21
4-Methylphenol	NA	NA	BDL	41	75
Phenol	NA	NA	BDL	95	54

* All concentrations except pH are given in parts per million (ppm).
** BDL = Below Detection Limit NA = sample not analyzed for this substance
*** See Appendix for a complete list of SVOAs and VOAs analyzed

TABLE 5

CONSERVATION CHEMICAL
GARY, INDIANA

PCB ANALYTICAL RESULTS

Sample	Description	PCB result (ppm)
F-1	PCB waste pile, dry brown soil	14
F-2	PCB waste pile, brown-black solid	3
F-3	PCB waste pile, brown-black solid	8
F-4	solid in tank #22, wet sediment	non-detect
F-5	area in front of tank #22, brown-black solid	4
F-6	bank of lagoon next to tank #22, sediment	7
F-7	soil north of acid-sludge pit #2, black tar-like solid	non-detect(1)
F-8	brown material in scrap tank north of acid-sludge pit #2	42
F-9	brown soil from acid-sludge pit #2	non-detect
F-10	brown sediment from "pie-basin"	non-detect
F-11	clay soil from "pie-basin"	non-detect
F-12	clay soil from acid-sludge pit #3	non-detect
F-13	brown solid from tank #12	non-detect
F-14	brown soil next to tank #1 where transformer was located	non-detect
F-15	brown soil, composite sample S-4	non-detect
F-16	duplicate of F-8	46

detection limit = 5 ppm
(1) detection limit = 10 ppm

* All reported as Arochlor 1248 (could also be Arochlor 1242) not corrected for moisture content

(8)

waste pile samples (WP1 through WP3) and both drum samples (DS-1 and DS-2) had pH readings of 11 or greater.

Reactive and total cyanide analysis was performed on eight samples. Readings from 22 mg/kg (soil sample, LP1-SA1) to 530 mg/kg (drum sample, DS-1) of total cyanide and 11 mg/kg (sludge sample, P-1) of reactive cyanide were recorded.

High polyaromatic hydrocarbon (PAH) concentrations results were detected in the PCB/lime waste pile (greater than 500 ppm - QE0015) and in the "pie-shaped" basin (greater than 600 ppm - QE0016) using the QTM laboratory.

5.0 DISCUSSION OF POTENTIAL THREATS

Conditions present at the CC site may constitute an imminent and substantial threat to public health and welfare and the environment, based upon considerations set forth in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 CFR Section 300.415 (b) (2), and therefore may justify that a time-critical removal action be conducted at the CC site. These conditions include, but are not limited to, the following:

* **Actual or potential exposure to nearby populations, animals, or the food chain from hazardous substances, pollutants, or contaminants.**

Evidence of acts of vandalism was observed by TAT throughout the site. All the windows in the buildings were broken and a section of the fence from the south side of the site was stolen, providing minimal security and easy access to nearby human and animal populations.

Five uncontrolled lab packs containing various lab chemicals were located in the on-site building and can be easily accessible to the population.

Significant concentrations of PCBs were detected in samples LP1-SA1 (22.7 mg/kg or ppm), WP2 (33.8 ppm), WP3 (31.3 ppm), and S-3 (23.7 ppm). Dermal effects of PCBs causes skin irritation, such as acne and rashes. Asbestos was determined to be present from sample A-1. The inhalation of friable asbestos is known to cause lung cancer. These contaminants, as well as the others, could be ignited, inhaled, or come in contact with the human population and pose an imminent and substantial threat to public health and welfare and the environment.

* **Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.**

Site investigations by the TAT identified approximately 175 drums and 12 tanks containing acid liquids with a pH of between 0 and 2 and caustic liquids with a pH of over 12.5. According to paragraph (a) (1) of 40 CFR Section 261.22 of the NCP, an aqueous liquid with a pH less than or equal to 2, or greater than or equal to 12.5, is considered to exhibit the criteria for corrosivity. Analytical sample results revealed concentrations of chromium above 5 mg/kg or ppm. According to paragraph (a) of 40 CFR Section 261.24 of the NCP, if an extract from a representative sample of the waste contains any of the contaminants listed in Table 1 of Section 261.24 at the concentration equal to or greater than the respective value, the sample is considered to exhibit the characteristic of toxicity. Analytical results indicated a sample having a flash point of 65°F. According to paragraph (a) (1) of 40 CFR Section 261.21 of the NCP, a liquid with a flash point less than 140°F is considered to exhibit the criteria for ignitability. According to paragraph (a) of 40 CFR Section 261.20 of the NCP, a hazardous waste is present if it represents any of the following characteristics: ignitability, corrosivity, reactivity, or toxicity.

Inhalation is the most important route of exposure for acetone. Symptoms of inhalation of acetone include nose, throat, and serious eye irritation; headaches; dizziness; confusion; nausea; and vomiting. Ingestion of acetone has caused comas, kidney damage, and metabolic changes. Dermal contact causes skin inflammation. In addition, chromium is a known carcinogen. Positive cyanide results were recorded from the drums on-site. The possibility exists for combining the acids and the cyanides to create deadly hydrogen cyanide gas.

* **Threat of fire or explosion**

Sample T4 had a flash point of 65°F and was found to contain 5,400,000 µg/kg of acetone. Acetone is a highly flammable liquid, and presents a dangerous disaster hazard due to its propensity for fire and explosion and its ability to react violently with oxidizing materials.

* **Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.**

All of the uncontrolled drums and tanks are exposed to the weather. The possibility exists that the contents of the drums and tanks could be released if the containers or valves rupture from freezing and expanding or by overflow due to events of heavy precipitation. Many of the drum lids and sides of the drums have corroded. The contents of several drums were visibly leaking from the sides and migrating into the ground due to corrosion of the containers.

6.0 REMOVAL ACTION

Mitigation of the threats described above requires the removal of approximately 90,500 gallons of acidic liquids, 25 cubic yards of acidic solids, 52,500 gallons of caustic liquids, 45 drums of caustic solids, 35,000 gallons of flammable liquids, 10,000 cubic yards of chromium contaminated soil, 130 drums of hazardous waste solids, 5,000 cubic yards of PCB/lime waste solids, 5 lab packs, and bags of asbestos. A two-phase removal action which implements off-site disposal is as follows.

6.1 Removal Action - Phase I

Phase I of the removal action would begin with the mobilization of the Emergency Response Cleanup Contractor Service (ERCS) to the site, the development of a site health and safety plan, securing the site, hazard categorization (hazcatting) of materials in each container and separation of drums and tanks into appropriate waste streams, compositing waste streams, compositing chromium contaminated soil, compositing PCB/lime contaminated soil, sending out composites for disposal parameters analysis, sending composites to appropriate waste facilities for waste approval, and subcontracting a firm to remove and dispose of the asbestos.

6.2 Removal Action - Phase II

Phase II of the removal would consist of sending the acidic liquids, caustic liquids, and cyanide drums off-site for disposal by treatment; the acidic solid waste and asbestos off-site to a landfill; the chromium contaminated soil and the drums of hazardous solids off-site for treatment and landfill disposal; the PCB/lime waste pile off-site to a special waste landfill; and the flammable liquid waste and lab packs off-site for treatment by incineration. The disposal would be followed by decontaminating and cutting up all of the tanks and vats on-site. The final stages of the site would be to send off all usable metal to a scrap yard and then demobilization from the CC site.

7.0 ESTIMATED COSTS

The cost estimation prepared for the mitigation of threats at the CC site addresses the disposal of all hazardous waste on-site and the demolition of all structures on-site. Estimated costs ate based on the treatment technologies stated in section 6.1 with a 20% contingency factor. The disposal of the hazardous waste on-site is estimated to require 110 11-hour working days plus mobilization and demobilization time, and to cost approximately $4,762,765. The cost estimate was generated by the Removal Cost Management System (RCMS). A copy of the cost estimate is presented in Appendix J.

8.0 SUMMARY

The removal of the hazardous materials from the CC site by U.S. EPA and the PRPs effectively mitigated some of the threats to human health and the environment. As of December 13, 1993, the following hazardous substances and conditions still remained present at the CC site:

a. Several tanks in the production area of the facility still contain acidic liquids and solids (approximately 90,500 gallons and 15 yd^3) and caustic liquids (approximately 52,500 gallons). Several other tanks are partially filled with sludges containing hazardous substances.

b. Tank #2 contains approximately 35,000 gallons of an unknown waste solvent with a flash point of 65°F. Approximately 125 drums containing 2,750 gallons of flammable waste solvents and sludges are stored at the site.

c. Three unsecured lagoons contain several thousand tons of sludge consisting of spent pickle liquor, heavy metals, oil products, and other hazardous materials.

d. Asbestos is still exposed and not properly contained.

e. Five uncontrolled lab packs are still located on-site.

f. Approximately 45 drums of cyanide material still remain on-site.

g. Approximately 5,000 cubic yards of hazardous waste solids (PCB/lime waste pile) is stored to the east of Tank #22.

Previous site investigations have been conducted at the CC site and have documented the site to be an imminent and substantial threat to the public health and welfare and the environment (see

Appendices D - I for previous site investigation reports). The TAT site assessment conducted on December 13 through 15, 1993 indicates that conditions at the CC site require immediate attention due to the nature of the hazardous substances that remain on-site and the easy access by human and animal populations to uncontrolled drums and tanks containing RCRA hazardous waste. If left unchecked, the possibility exists of migration of these wastes into the environment.

APPENDIX O

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

0000024

FEB 21 1997

REPLY TO THE ATTENTION OF:

MEMORANDUM

DATE:

SUBJECT: ACTION MEMORANDUM - Determination of Threat to Public Health or Welfare or the Environment at the Conservation Chemical Site in Gary, Indiana (Site ID# Y1)

FROM: Steven J. Faryan, On-Scene Coordinator
Emergency Response Branch

TO: William E. Muno, Director
Superfund Division

THRU: Rick Karl, Chief Emergency Response Branch

I. PURPOSE

The purpose of this memorandum is to document the determination of an imminent and substantial threat to public health and the environment posed by the presence of hazardous substances at the Conservation Chemical Company of Illinois, Inc. Site, located at 6500 Industrial Highway, Gary, Indiana. At this point in time, it is anticipated that this removal action will be carried out by a group of the Potentially Responsible Parties ("PRPs"), pursuant to an Administrative Order on Consent (that has not yet been negotiated). There are no nationally significant or precedent-setting issues associated with the response action.

II. SITE CONDITIONS AND BACKGROUND

A. Site Description

1. Removal Site evaluation

The Conservation Chemical Company of Illinois, Inc., Site ("CCCI Site" or "the Site") has been assigned the CERCLIS identification number: IND040888992. Prior to 1967, the Site property was owned by the Berry Oil Company which operated an oil refinery on the property. In 1967, the Conservation Chemical Company of Illinois, Inc., acquired the property from the Berry Oil Company, and operated a chemical reclaiming, transport, storage and disposal facility on the site. The hazardous substances presently found on-site were released onto the property as the result of the above-described operations.

2. Physical location

The Site is a 4.1-acre, triangular-shaped piece of land located in an industrial area in Gary, Indiana. It is situated north of and adjacent to the Gary Municipal Airport's main runway. The Site is bound by the Western Scrap property to the North, the Elgin, Joliet and Eastern Railroad to the South and a wetland to the West.

3. Site characteristics

There is no federally-owned facility located on-site. At the present time, there are no operations being conducted on-site. Prior to 1967, however, the Berry Oil Company operated an oil refinery at the Site, and from 1967 through 1985, the Conservation Chemical Company of Illinois, Inc. (CCCI), conducted operations at the Site involving hazardous substances and wastes. CCCI stored and treated spent acids, oils, and solvents; produced ferric chloride from spent pickle liquor; and operated as a hazardous waste terminal and treatment facility for hazardous substances including, but not limited to acids, cyanide, solvents, plating waste and waste oils. Releases of hazardous substances have occurred on-site as a result of the operations of the Berry Oil Company and CCCI.

4. Release or threatened release into the environment of a hazardous substance, or pollutant or contaminant.

From December 1993 through July 1994, U.S. EPA conducted a site assessment to document the threats at the CCCI Site. The site inspection documented 12 tanks containing acids or solvents; a number of empty tanks with an acid or caustic residue; a number of drums containing acids or caustic liquids; a number of empty drums with an acid or caustic residue; soil contaminated with hazardous substances; lagoons/sludge pits containing hazardous substances; five thousand cubic yards of PCB-contaminated soil, five uncontrolled lab packs containing laboratory chemicals; and contaminated groundwater.

Laboratory analysis of the samples taken during the site investigation revealed the presence of the following hazardous substances and hazardous wastes on-site: high concentrations of volatile and semi-volatile compounds in Tank 4 and in P-1 (Cement pit); high concentrations of solvents in solid samples taken from drum sample 1 (DS-1) and drum sample 2 (DS-2); sludge-material samples collected from the pie-shaped basin were hazardous by the RCRA definition for chromium; samples taken from tank 4 (T-4) indicated a flash point of 65° F, which, according 40 C.F.R. § 261.21, is a RCRA characteristic hazardous waste by virtue of ignitability (flash point of less than 140 degrees F.); sample A-1 tested positive for asbestos with an amosite asbestos result of 45%; samples T2, T3, T5 through T7, and T9 through T12 all indicated pH readings below 2, and sample T1 and T8 had pH readings above 13, which, according to 40 C.F.R. § 261.22, is considered a RCRA-characteristic hazardous waste by virtue of corrosivity (pH less than or equal to 2 or greater than or equal to

12.5);reactive and total cyanide was detected in the pie-shaped basin and in drum sample 1 (DS-1) and drum sample 2 (DS-2) and Pit 1; high polycyclic aromatic hydrocarbons (PAHs) concentrations were detected in the PCB/lime waste pile (greater than 500 ppm) and in the "pie-shaped basin" (greater than 600 ppm); PCB concentrations were also detected in the waste pile; soil borings collected during the Geoprobe testing indicated high levels of volatile organic solvents such as Trichloroethane, ranging as high as 960 ppm in soils from SB-1; cyanide was detected at 270 ppm in SB-4 and SB-3; SB-6 indicated elevated levels of cyanide; ground water samples collected during the Geoprobe investigation indicated high levels of chlorinated solvents such as Trichloroethene (as high as 45,000 ppb); sample GPW-3 was found to contain 3,100 ug/l of acetone; and six inches of a floating chemical layer were observed in Monitoring Well ERS-3.

The hazardous wastes and hazardous substances described above are in open and deteriorating drums and tanks, as well as in open waste piles and waste lagoons. The hazardous substances have been observed leaking onto the ground from the above-described containers, and, thus, demonstrate actual releases to the environment. The ground water and soil in the eastern one-third of the Site are most impacted by past spills and releases. The City of Gary Airport has reported numerous releases from the Site into the drainage ditch on airport property which drains to the Calumet River and then into Lake Michigan. Further, during the site investigation, it was found that the Site is not completely secure and is easily accessible because of missing sections of fencing around the Site. This affords access to the Site by human and animal populations, creating the potential for direct contact with hazardous substances, as described above.

5. NPL status

The Site is not on the National Priorities List, 40 C.F.R. Part 300, Appendix B.

B. Other Actions to Date

1. Previous actions

From October 1985 through September 1990, EPA conducted limited, but substantial removal activities at the Site, including, but not limited to the construction a fence to secure the Site; excavation, sampling and disposal of buried drums containing hazardous substances; consolidation of hazardous waste from severely deteriorating and leaking drums and tanks and placement of said hazardous waste into more structurally sound tanks on-site; and disposal of solid and liquid hazardous waste from certain tanks and drums. In connection with the removal activities described above, the Agency disposed of 187,948 gallons of PCB-contaminated oil; 214.78 tons of PCB-contaminated soil; 1,941 gallons of liquid hazardous waste; 60 tons of hazardous waste solids; 15,300 gallons of flammable waste liquid; 112 gallons of flammable waste solid; 1,760 gallons of waste chromic acid; 2,960 gallons of non-hazardous solid; 74 cubic yards of contaminated debris; and 51,600 pounds of silicon tetrachloride.

On September 27, 1985, the Agency issued a CERCLA Section 106(a) Unilateral Administrative Order to the owner-operator of Conservation Chemical Company of Illinois and 18 generator-PRPs that were associated with the Site. A supplemental Unilateral Administrative Order was issued by EPA to the same Respondent(s) on November 22, 1985. Pursuant to the UAOs, a group of the generator-PRPs conducted limited, but significant removal activities at the Site, including constructing a fence around a portion of the Site for security purposes, removal and disposal of acids from 4 tanks; removal and disposal of acid sludge from 1 tank; removal and disposal of cyanide from 13 tanks; and dismantling a tower used to store cyanide, and disposal of the tower's cyanide-contaminated building materials.

C. State and Local Authorities' Roles

1. State and local actions to date

The Indiana Department of Environmental Management has requested U.S. EPA assistance to conduct a removal action at the CCCI Site. IDEM is fully supportive of the time critical removal action and will support U.S. EPA if necessary.

2. Potential for continued State/local response

Neither IDEM or the City of Gary have the financial resources to conduct this time-critical removal action.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIROMMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to Public Health, Welfare or the Environment

The conditions documented at the Site constitute a threat to public health, welfare, or the environment based upon the factors set forth in Section 300.415(b)(2) of the National Oil and Hazardous Substances Pollution Contingency Plan, as amended ("NCP"), 40 C.F.R. § 300.415(b)(2). These factors include, but are not limited to, the following:

Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants; this factor is present at the Site due to the existence of loose friable asbestos, cyanide chromium and acid liquid and sludge found in soil, drums and tanks, uncontrolled surface impoundments, and five uncontrolled lab packs containing laboratory chemicals. It is estimated that humans and animals in the general area of the Site may be exposed to toxic fumes in the event of an explosion or fire or chemical reaction with the acid and cyanide material which evolves hydrogen cyanide a lethal chemical asphyxiant. In addition, it is possible that any humans who enter the Site without protective clothing may come into contact with hazardous substances.

Actual or potential contamination of drinking water supplies or sensitive ecosystems; this factor is present at the Site due to the existence of wetlands located directly to the south of the Site, and the fact that surface water drainage runs southward toward the wetlands. A floating chemical layer has been observed seeping into an unnamed drainage ditch across the railroad tracks, 180 feet southeast of the Site. This ditch leads to the Calumet River and then into Lake Michigan, a drinking water source.

Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release; this factor is present at the Site due to the existence of at least 175 drums and 12 tanks containing acid and caustic liquids, and drums containing cyanide.

High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate; this factor is present at the Site due to the existence of significant concentrations of volatile organic compounds, semi-volatile compounds, and cyanide found in open lagoons, piles, and surface soil, and PCB-contaminated soil and chromium-contaminated soil and sludge, that may migrate off-site.

Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released; this factor is present at the Site due to the existence of severe cold-weather conditions, (including snow, icing, freeze-thaw phenomena and extreme cold temperatures) in the fall and winter seasons. These conditions would adversely affect the tanks, drums, surface impoundments, and contaminated soils, all of which are exposed to the elements.

Threats of fire or explosion; this factor is present at the Site due to the existence of a tank containing acetone with a flash point of 65 degrees that has a propensity for fire and explosion, and has the ability to react violently with oxidizing materials.

Other situations or factors that may pose threats to public health or welfare or the environment; this factor is present at the Site due to the existence of vandalism problems, such as missing sections of fencing around the Site that could facilitate easy access to the Site (and hazardous substances) by humans and animal populations. The three vertical tanks full of acid and caustic liquids have easily accessible valves which could be opened to allow the release of hazardous substances into the environment. These acid liquids, if released, could react with cyanide-contaminated soils and cyanide drums, causing a release of hydrogen cyanide, an extremely poisonous substance and chemical asphyxiant.

The unavailability of other appropriate federal or state response mechanisms to respond to the release; this factor supports the actions required by this Order at the Site because the Indiana Department of Environmental Management (IDEM) is unable to financially support the clean up action but has been notified and has supported of all pending removal actions at the Site.

IV. ENDANGERMENT DETERMINATION

Given the Site conditions, the nature of the hazardous substances on Site, and the potential exposure pathways to nearby populations described in Sections II and III above, actual or threatened releases of hazardous substances from this Site, if not addressed by implementing the response actions selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS

A. Proposed Actions

1. Proposed action description

The following removal activities are to be implemented at the Site to mitigate the threats posed by the presence of hazardous substances at the CCCI Site.

a. Prepare a Removal Action Work Plan to assess and mitigate the documented threats posed by contaminants found on Site. This Removal Action Work Plan shall address the identification, containment, and disposal or treatment of the above mentioned hazardous substances or hazardous wastes. The Work Plan will include as attachments a Health and Safety Plan, a Quality Assurance/Quality Control Plan, and a site-specific Sampling Plan.

b. Immediately control access to the Site by repairing and/or constructing fences, and providing appropriate site security;

c. Tarp or overpack leaking or open drums, waste piles and open surface impoundments;

d. Design a site-specific sampling plan which provides for the collection of samples from all drums, tanks, soil, pits, lagoons, asbestos, lab packs, and any other identified areas; the collection of composite samples of appropriate waste streams, chromium contaminated soils, lagoon sludge, PCB/lime waste pile, liquid waste stream and any other identified waste streams; the performance of analytical methods for disposal parameters; and the transport of appropriate samples to waste facilities which are in compliance with the CERCLA off-site rule.

e. Perform sampling and analyses of all drums, tanks, soil, pits, lagoons, asbestos, lab packs and any other identified areas, as per the site-specific sampling plan. This shall include the collection of composite samples of appropriate waste streams, including, but not limited to chromium-contaminated soils, PCB-contaminated soils/PCB-lime waste pile, liquid wastes, and any other identified waste stream for analysis of disposal parameters. Appropriate composite samples shall be collected and sent to waste facilities for disposal acceptance (facilities must be in compliance with the CERCLA off-site Rule).

f. Perform hazard categorization (hazcatting) analyses to assess the viability of bulk-loading and disposal of the liquid wastes. Segregate drums and containers into compatible waste streams based on hazcatting analyses.

g. Conduct an extent of contamination study to characterize the surface and sub-surface soil contamination. Surface and sub-surface samples shall be analyzed for PCBs, TCL and TAL parameters, Cyanide, TCLP parameters, and other RCRA characteristic analytes.

h. Conduct a geophysical survey to identify areas where suspected buried drums are located.

i. Perform a Treatability Study on the three waste lagoons to assess the viability of on-site stabilization as a viable response action. If successful, the two lagoons located on the CCCI property will be stabilized in place, and the third lagoon will be moved onto the CCCI property and stabilized, if necessary. The stabilizing materials will be capped with clay.

j. Inventory all existing CCCI-related ground water monitoring wells at the Site and determine which of these wells are functional. Abandon dysfunctional ground water monitoring wells as per IDEM regulations. Install necessary new groundwater monitoring wells, as per the site-specific sampling plan and/or the OSC.

k. Conduct ground water sampling from the existing functioning ground water monitoring wells and/or newly installed ground water monitoring wells, and the existing collection trench (on the Gary Airport property) to assist in the design and implementation of a containment and collection system to be installed on the CCCI Site, along the Southeast border of the Site.

l. Collect air samples, as appropriate, for personnel and general site perimeter air monitoring to assess if dust, volatile organic, PCBs or other contaminants of concerns are below acceptable OSHA standards;

m. Based on results from the initial sampling and extent of contamination study, treat, remove, and properly dispose of all hazardous substances or hazardous wastes at a RCRA or TSCA-approved facility which is in compliance with the CERCLA off-site Rule. At a minimum, Respondents shall conduct the following removal activities:

(i) Remove and dispose of, or treat acid liquids and solids, caustic liquids and solids, cyanide liquids and solids, solvents and flammable liquids, chromium-contaminated soils, and PCB-contaminated soils, and contaminated waste lagoons.

(ii) Decontaminate steel tanks, lines, drums, and containers, and collect and treat or dispose of waste-water generated. Remove decontaminated steel and debris to an appropriate recycling facility.

(iii) Backfill all excavated areas with clean fill and level to pre-excavation grades.

(iv) Excavate, treat and dispose of contaminated soils at appropriate disposal facilities.

(v) Assess, design and implement a containment and collection system along the Southeast border of the Site to collect and dispose of the floating chemical layer in the groundwater that originates at the CCCI Site.

This system will prevent the release of hazardous substances in the floating layer to the unnamed ditch located on the Gary Airport property, and, eventually, to the Calumet River.

(vi) Conduct an investigation, including sampling and analysis, to determine which structures on-site contain asbestos. Based on the investigation, all friable asbestos will be abated, packaged and disposed of in accordance with applicable regulations, prior to the demolition of all structures containing friable asbestos.

(vii) Demolish all above ground structures and level the Site to grade. All buildings, wood cribbing, abandoned railroad spurs and elevated piping systems will be dismantled and disposed of appropriately.

n. Prepare and implement a verification sampling plan to assess whether appropriate cleanup levels, as specified in the approved Work Plan, have been met for all identified contaminants for all media of concern. The verification sampling shall include, at a minimum, sampling of soil, treated waste, surface water, ground water, ground water collected in the recovery system and any decontaminated buildings or debris. If verification sampling demonstrates that cleanup levels for these contaminants have not been met, conduct additional removal activities as per the direction of the OSC.

2. Applicable or relevant and appropriate requirements (ARARs)

All applicable or relevant and appropriate requirements (ARARs) of Federal Law will be complied with to the extent practicable. A letter has been sent to the IDEM requesting that it identify State ARARs. Any State ARARs identified in a timely manner for this removal action will be complied with to the extent practicable.

3. Post Removal Site Controls

The OSC has begun planning for provision of post-removal site control, consistent with the NCP, 40 C.F.R. Part 300. The response actions described in this memorandum directly address actual or threatened releases of hazardous substances, pollutants or contaminants at the CCCI Site which may pose an imminent and substantial endangerment to public health and safety, and to the environment. These response actions do not impose a burden on affected property disproportionate to the extent to which that property contributes to the conditions being addressed.

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Immediate action is required at the Site due to alleviate the on-going migration of contaminants. In addition, waste lagoons, drums, tanks and contaminated soil containing hazardous substances and hazardous wastes have released or have the potential to release to the soil, groundwater and surface water. Delay or non-action will result in an increased risk of direct human contact with hazardous substances, and migration of contaminants into the soil, groundwater and surface water.

VII. OUTSTANDING POLICY ISSUES

No significant policy issues are associated with the CCCI Site.

VIII. ENFORCEMENT

See the attached ENFORCEMENT ADDENDUM (Enforcement Sensitive).

IX. RECOMMENDATION

This decision document represents the selected removal action for the Conservation Chemical Company of Illinois, Inc., in Gary, Indiana, developed in accordance with CERCLA as amended, and is not inconsistent with the NCP, 40 C.F.R. Part 300. This decision is based on the Administrative Record for the Site (Attachment A).

Conditions at the Site meet the NCP criteria for a removal action, 40 C.F.R. § 300.415(b)(2). I recommend your approval of the proposed removal actions and approval of this Endangerment Action Memorandum documenting threats to public health, and the environment.

APPROVED: W. E. Muno DATE: 2/21/97
Director, Superfund Division

DISAPPROVED: ______ DATE: ______
Director, Superfund Division

cc Cynthia Kawakami, ORC
Beth Guria, ERB, ESS
E. Watkins, U.S. EPA HQ, 5202G
D. Henne, U.S. Department of Interior, **w/o Enf. Addendum**
IDEM, **w/o Enf. Addendum**

PAGE 15
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REDACTED

NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

ENFORCEMENT ADDENDUM
ENFORCEMENT SENSITIVE
FEBRUARY 18, 1997
2 PAGES

REDACTED

NOT RELEVANT TO THE SELECTION OF THE REMOVAL ACTION

AR

ATTACHMENT

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL ACTION

ADMINISTRATIVE RECORD
FOR
CONSERVATION CHEMICAL COMPANY
GARY, INDIANA

ORIGINAL
OCTOBER 18, 1994

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	10/26/83	Prober, R., Siegel, G., Havens & Emerson Ltd.	Douglas, A., Gary Municipal Airport Authority	Hazardous Waste Assessment (Final)	45
2	01/06/84	Bachunas, C., E & E	St. John, R.	Sampling, Case #2156, Low Water/Low Soil Organics	55
3	05/14/84	Smith, H., E & E	Josif, D., CH2M Hill	Preliminary Sampling	35
4	02/00/85	Weston-Sper	U.S. EPA	Site Assessment	20
5	05/00/85	Weston-Sper	U.S. EPA	Emergency Action Plan	23
6	09/06/85	Porter, J., U.S. EPA	Adamkus, V., U.S. EPA	Action Memorandum, Immediate Removal Request	15
7	09/23/85	Fields, T., U.S. EPA	Porter, J., U.S. EPA	Action Memorandum, $1 Million Exemption Request	2
8	10/11/85	Murphy, M., Enviresponse, Inc.	Jones, J.	Soil Samples	9
9	10/31/85	Prince, G., U.S. EPA	Simes, B., U.S. EPA	Conservation Chemical Annex, Results of Analyses	29
10	11/20/85	Prince, G., U.S. EPA	Simes, B., U.S. EPA	Letter regarding compilation of data	1
11	11/22/85	Michalowicz, J., Chen, D., Koppen, J., Enviresponse, Inc.	Prince, G., U.S. EPA	Priority Pollutant and RCRA Analysis Vols. II & III	813
12	09/03/86	Simes, W., U.S. EPA	Adamkus, V., U.S. EPA	Action Memorandum-6-Month Time Exemption	2
13	03/12/87	Internatl. Technology Corporation		Site Action Plan & Appendices A, B, and C, Vols. I & II	460

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
14	05/29/90	Pyles, D., Koelling, N., ERS, Inc.	Krikau, F., Fred Krikau & Associates	CCCI Ground Water Investigation Report	181
15	10/12/90	Pyles, D., ERS, Inc.	Krikau, F., 6500 Industrial Highway Group	Quarterly Ground Water Monitoring	50
16	02/02/94	Sherrard, J., Ecology & Environment, Inc.	U.S. EPA	Site Assessment/ Removal Action Plan w/Attachments A-J, Vols. I & II	369

UPDATE #1
FEBRUARY 12, 1997

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	07/05/94	Ecology and Environment, Inc.	U.S. EPA	Geoprobe and Ground-water Assessment Attachment to the Site Assessment	137
2	09/28/94	Karl, R., U.S. EPA	Various Potentially Responsible Parties	Letter re: General Notice of Potential Liability w/Attached Mailing List	28
3	10/31/94	Karl, R., U.S. EPA	Various Potentially Responsible Parties	Letter re: General Notice of Potential Liability w/Attached Mailing List	27
4	02/21/95	Karl, R., U.S. EPA	Various Potentially Responsible Parties	Letter re: General Notice of Potential Liability w/Attached (1) Mailing List and (2) List of PRP's Receiving Previous Notice Letters	30
5	09/01/95	Sherrard, J., Ecology and Environment, Inc.	Faryan, S., U.S. EPA	Memorandum re: Cost Estimate for the CCCI Site (PORTIONS OF THIS DOCUMENT HAVE BEEN REDACTED)	8
6	09/08/95	Karl, R., U.S. EPA	Dehais, P.; Toledo Pickling and Steel Service and M. Longchampt; Franco Steel Corporation	Letter re: General Notice of Potential Liability w/Attached List of PRP's Receiving Previous Notice Letters	29

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
7	09/19/95	Karl, R., U.S. EPA	Berger, N., Thor Power Tools	Letter re: General Notice of Potential Liability w/Attached List of PRP's Receiving Previous Notice Letters	30
8	10/13/95	Karl, R., U.S. EPA	Various Potentially Responsible Parties	Letter re: General Notice of Potential Liability w/Attached Mailing List and List of PRPs Receiving Previous Notice Letters	30
9	02/08/96	Muno, W., U.S. EPA	*De Minimis* Potentially Responsible Parties	Letter re: U.S. EPA Offer of *De Minimis* Settlement w/Attached (1) Mailing List and (2) Draft Administrative Order on Consent	83
10	02/14/96	Kawakami, C., U.S. EPA	Various Potentially Responsible Parties	Letter re: Notice of *De Minimis* Settlement Offer w/Attached (1) Major PRP Mailing List and (2) Administrative Order on Consent	55
11	06/12/96	Federal Register	Public	Notice: *De Minimis* Settlement Under Section 122(g) of CERCLA in the Matter of Conservation Chemical Company of Illinois; Gary, IN	2
12	07/11/96	Helmstetter, C.; Spencer, Fane, Britt & Browne	Kawakami, C.; U.S. EPA	Letter re: Various PRP's Comments on the Proposed *De Minimis* Settlement w/ Attached (1) List of Companies Submitting Comments and (2) May 2, 1995 Letter from C. Lake (McBride Baker & Coles) Transmitting Initial Comments	6
13	07/12/96	Sargis, M., Mauck Bellande Cheely	Kawakami, C., U.S. EPA	Letter re: K.A. Steel Chemical's Comments on the Proposed *De Minimis* Settlement w/Attachments	161
14	08/12/96	Kawakami, C., U.S. EPA		Responsiveness Summary re: the *De Minimis* Settlement	11
15	08/12/96	Muno, W., U.S. EPA		Declaration of William E. Muno re: the *De Minimis* Settlement and Final *De Minimis* Administrative Order on Consent	2

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
16	08/30/96	Kawakami, C., U.S. EPA	Helmstetter, C.; Spencer, Fane, Britt & Browne	Letter Forwarding Attached U.S. EPA's Responsiveness Summary re: the *De Minimis* Settlement	13
17	08/30/96	Kawakami, C., U.S. EPA	Sargis, M.; Mauck Bellande Cheely	Letter Forwarding Attached U.S. EPA's Responsiveness Summary re: the *De Minimis* Settlement	13
18	08/30/96	Kawakami, C., U.S. EPA	Settling *De Minimis* Parties	Letter re: Effective Date of the Final *De Minimis* Settlement for the CCCI Site w/Attached (1) Mailing List and (2) Final *De Minimis* Administrative Order on Consent	62
19	12/12/96	Federal Register	Public	Notice: Correction of Typographical Error in Final Settlement Payment Amount for One Settling *De Minimis* Party and Correction of Final *De Minimis* Settlement Payment Amounts for Two Settling *De Minimis* Parties; In the Matter of Conservation Chemical Company of Illinois, Inc.; Gary, IN	1
20	02/04/97	Kawakami, C., U.S. EPA		Revised Appendix D to the Final *De Minimis* Administrative Order on Consent for the Conservation Chemical Company of Illinois, Inc.	3
21	02/04/97	Kawakami, C., U.S. EPA	Henry, P., Appleton Electric Company	Letter re: Final *De Minimis* Payment for Appleton Electric Now Due	6
22	02/04/97	Kawakami, C., U.S. EPA	Young, J., NL Industries, Inc.	Letter re: Final *De Minimis* Settlement Payment for Doehler-Jarvis Now Due	6
23	02/04/97	Kawakami, C., U.S. EPA	Gaffney, T., Jones Chemical, Inc.	Letter re: Final *De Minimis* Settlement Payment for Jones Chemical Now Due	6

NO.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
24	00/00/00	Faryan, S., U.S. EPA	Muno, W., U.S. EPA	Action Memorandum: Determination of Threat to Public Health or Welfare or the Environment at the Conservation Chemical Site (PENDING)	
25	02/07/97	Karl, R., U.S. EPA	Various Potentially Responsible Parties	Letter re: General Notice of Potential Liability and Offer to Negotiate Settlement w/Attached (1) Mailing List, (2) List of PRPs at Site and (3) Draft Administrative Order on Consent	36

APPENDIX P

CONSERVATION CHEMICAL COMPANY OF ILLINOIS
GARY, INDIANA

FINAL REPORT

Prepared in Response to Administrative Order by Consent
Pursuant to Section 106 of the Comprehensive Environmental
Response, Compensation, and Liability Act of 1980, as amended,
42 U.S.C. § 9606(a)

PREPARED BY:

Krikau, Pyles, Rysiewicz and Associates, Inc.

414 Plaza Drive, Suite 106
Westmont, Illinois 60559

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January 2002

TABLE OF CONTENTS

FIGURES

TABLES

APPENDICES

DESCRIPTION

1.0 INTRODUCTION

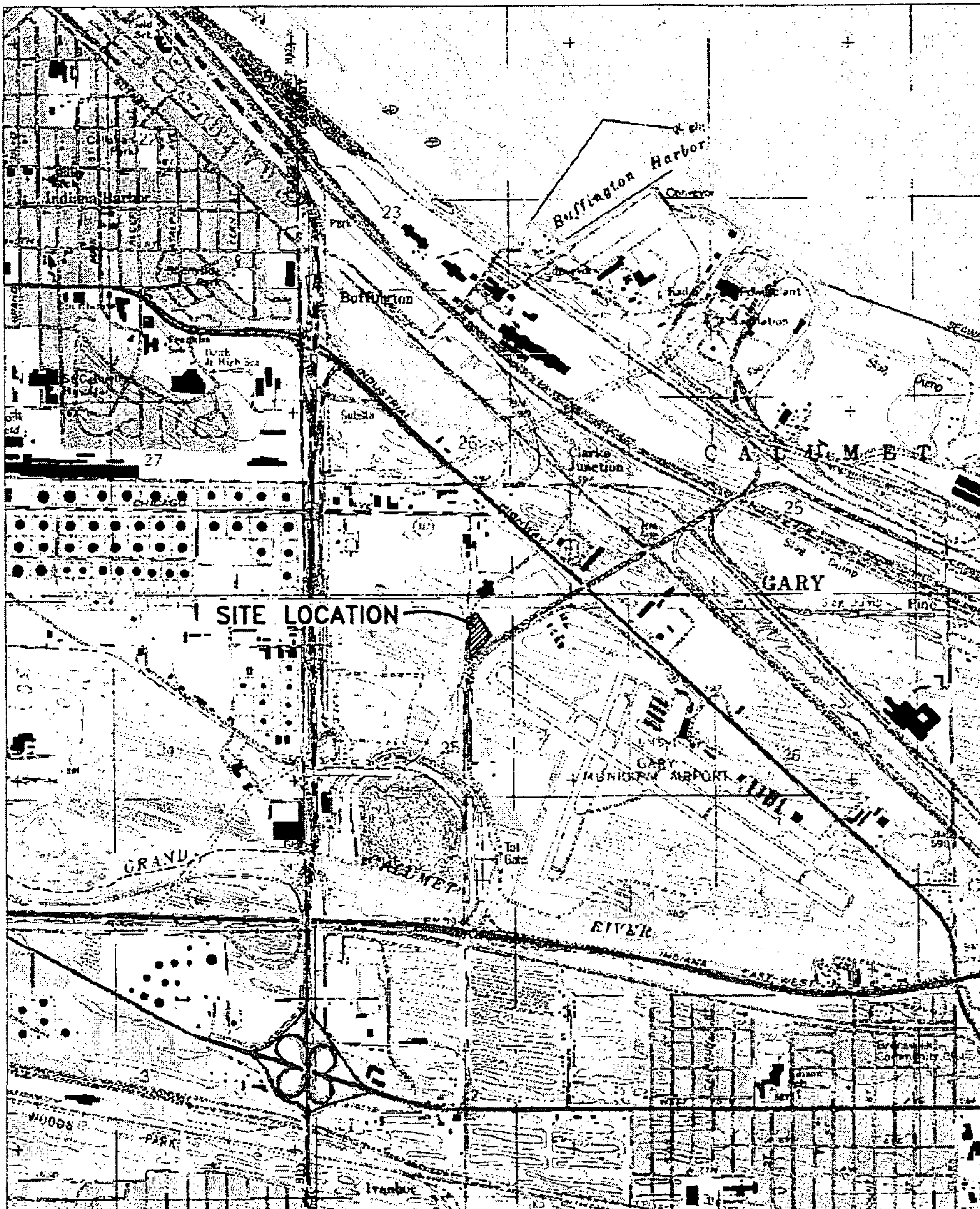
This Final Report was prepared to document the investigative, sampling, and remediation activities performed to comply with Administrative Order, Docket No. VW-98-C-497 (the Order) and Amendment to the Order which were entered into by the United States Environmental Protection Agency (EPA) and the Potentially Responsible Parties (PRP's), known as the 6500 Industrial Highway Group, for the Conservation Chemical Company of Illinois, Inc. (CCCI) site. The CCCI site is located at 6499 Industrial Highway, Lake County, Gary, Indiana. The effective dates of the Order and Amendment were February 4, 1999 and November 29, 2001, respectively.

1.1 Site Description

CCCI site is a 4.1-acre triangular-shaped piece of land in Gary, Indiana. The site is situated north of and adjacent to the Gary/Chicago Airport's main runway, and is bounded by the Western Scrap property to the north and east, the Elgin, Joliet and Eastern (EJ&E) Railroad tracks to the south, and an undeveloped tract of land to the west. See Figure 1-1.

1.2 Work Plan Overview

Initially, a Work Plan was developed on behalf of the PRP's by Krikau, Pyles, Rysiewicz & Associates, Inc. (KPR). This Work Plan, which was dated March, 1999 and was approved by EPA on April 27, 1999, outlined the project activities to be performed to comply with the requirements of the Order. During the implementation of the Work Plan, however, certain modifications to the scope of activities specified in the Work Plan were required and ultimately agreed to by both EPA and the PRP's. A subsequent letter dated April 13, 2000 which documented the initial modifications was prepared and executed. Copies of the Work Plan, approval and subsequent acknowledgment letters, and modification letter are included in Appendix A. Furthermore, as a result of the Amendment to the Order, the requirement of installing a containment barrier was replaced by the installation of a sewer on Gary/Chicago Airport property. This installation, the final remedial activity required, was completed by November 30, 2001. A copy of the Amendment to the Order is also included in Appendix A.



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data USGS

738 ft Scale: 1 : 75,800 Detail: 13-0 Datum: WGS84

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GENERAL SITE LOCATION MAP	
Conservation Chemical Company 6499 Industrial Highway Gary, Indiana	
Scale: 1" = 2500'	Date: January, 2002
KPR Project No. 17094	FIGURE 1-1

1.3 General Description of Activities Performed

In general, the following investigative and remedial activities were performed in response to the Order:

a. Site access, site security and a field operations office were established.

b. An inventory of the aboveground drums, tanks, basins, lagoons, and potential asbestos containing materials (ACM) was performed.

c. Sampling of the contents found in the aboveground drums, tanks, basins, lagoons, and ACM was performed to characterize each material for disposal or treatment.

d. All scrap metal from tanks, towers, aboveground pipe, and drums, along with any miscellaneous metal found on the site, was cleaned, cut, and removed off-site for recycling.

e. An extent of contamination study was conducted in the eastern one-third of the site. As a result of the findings, contaminated subsurface soils in certain "hot spot" areas were removed and disposed of off-site.

f. Additional subsurface areas, as identified by EPA, were investigated for the presence of buried drums. The drums encountered were excavated, profiled for disposal, and properly disposed of off-site.

g. A treatability study was performed for each of the sludge materials contained in the three (3) lagoons identified on-site. As a result of the study, the contents of each lagoon were stabilized to non-hazardous levels and placed on-site under a clay cap and clean topsoil. The capped areas were ultimately seeded to promote vegetation growth to assist in erosion control.

h. An inventory of all existing groundwater monitoring wells on-site was performed and all of the wells identified abandoned in accordance with Indiana Department of Environmental Management (IDEM) regulations.

i. As an alternative to installing a containment barrier along the southeast border, a concrete sewer was installed in the ditch on Gary/Chicago Airport property across the EJ & E railroad tracks which border the southeast perimeter of the CCCI site.

j. All excavated areas were backfilled with clean fill.

k. All aboveground structures were demolished and the resulting debris disposed of off-site.

l. A railroad spur running through the central portion of the CCCI site was dismantled. The rails were sent to a metal recycler and the railroad ties disposed of off-site.

m. The decontamination pad was removed and the entire CCCI site was leveled.

n. The security fence surrounding the CCCI site was relocated to within the site's property line and replaced and/or repaired where required.

o. The field operations office was demobilized.

p. Custodial responsibility of the site was relinquished to EPA on August 23, 2000.

2.0 ESTABLISHMENT OF SITE CONTROL AND OPERATIONS

On July 1, 1999, KPR assumed the custodial responsibility of the CCCI site from EPA. As such the following activities were implemented:

2.1 Site Control

Access to the site was controlled by re-establishing and enhancing site security. This was accomplished by repairing the existing perimeter fence around the site, providing security guard service to monitor the site on a 24-hour basis, and establishing procedures for authorized access to the site.

2.1.1 Fence

The existing sections of fence were assessed for its integrity, its ability to prevent unauthorized access to the site by persons or ground animals and for its location in relationship to property boundaries. Portions of the existing fence not currently on property lines were relocated so that the fence coincided, as close as practicable, with actual property boundaries. The property lines were verified by the performance of a property survey and were identified by stakes.

Certain sections of the existing fence which were in disrepair were either replaced or refurbished to match the quality of acceptable fence sections. In areas where no fence existed, new sections of fence were installed.

The site entrance was re-established from Industrial Highway, across Western Scrap property, at the east property line of the site. This route was improved, graded, and routinely maintained to allow vehicular access and was demarcated by a newly constructed fence line.

The second or auxiliary gate established was the former entrance located at the northwest property line across property belonging to SES, Inc. and from Route 312. This gate was utilized as an emergency exit during on-site activities and was locked when not in use.

2.1.2 Site Security and Access Procedures

Site security was enhanced by employing a reputable guard service during the implementation of this Work Plan to monitor access to the site on a 24-hour basis. The firm providing this service (A&R Security) was stationed in the guard house during normal business hours and in the field operations office the rest of the time. The guard house was established at the site entrance access road off Industrial Highway. A sign was posted to visually mark the site entrance.

The security firm had the responsibility of assuring that all visitors sign in and their access approved prior to entering the site.

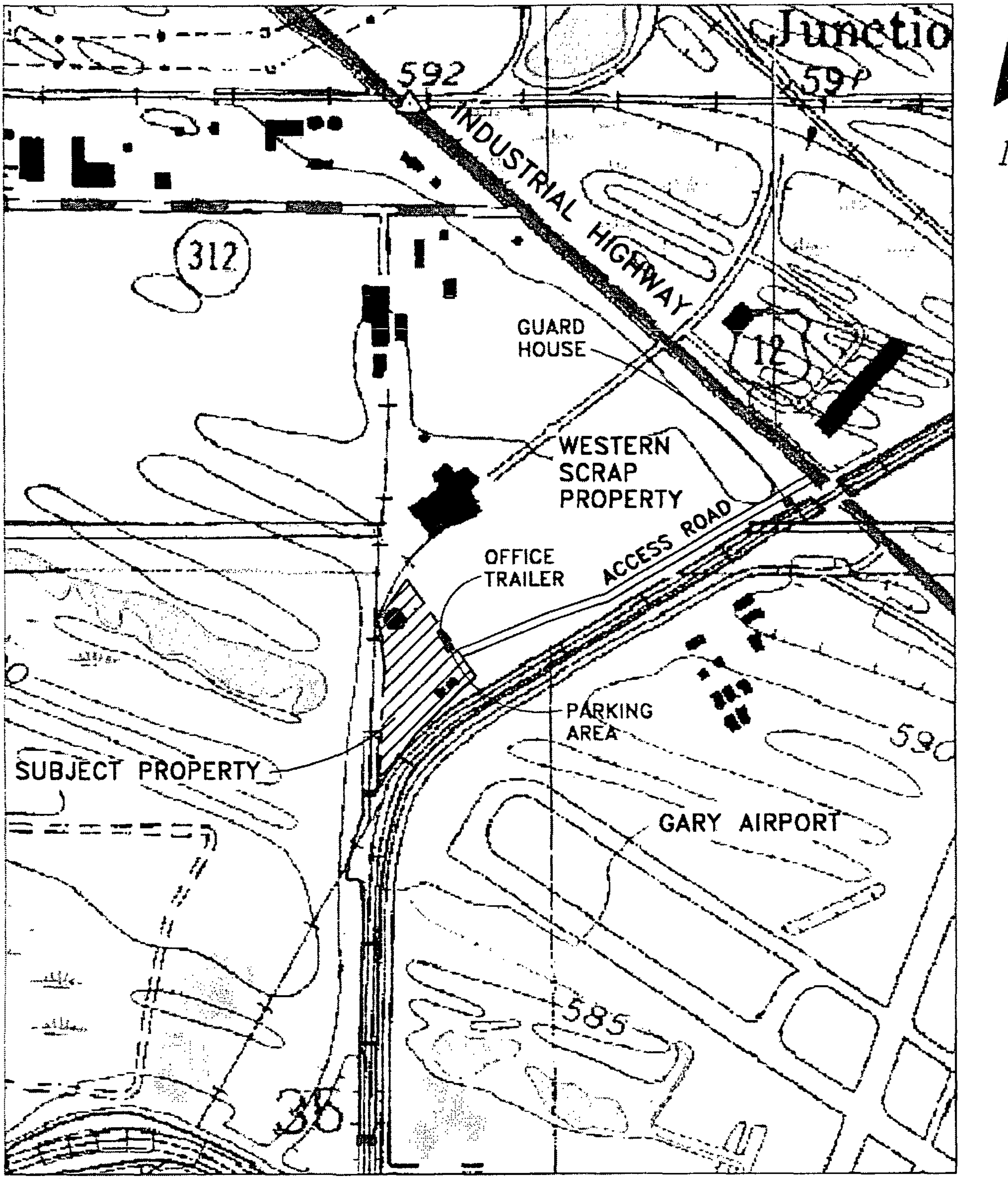
A list of contacts with jurisdiction over the site including the fire department, police department, EPA's OSC and emergency response groups, and other key individuals was provided to the security firm in the case of an emergency and clearly posted within the site field office.

2.1.3 Site Field Operations Office

An office trailer was located near the main entrance to the site.

Electric and phone service were established to the field office. Potable water service at the site was provided in the form of bottled water by a commercial water supplier. Suitable sanitary facilities were provided and routinely serviced by a qualified portable lavatory service contractor.

A designated parking area was established outside the field office. All personnel entering the site were required to park their vehicles in this designated area. No personal vehicles were allowed to enter the site without the permission of EPA or a designated representative of the PRP's. Figure 2-1 depicts the approximate locations of the fence line, office trailer, and designated parking area.



3-D TopoQuads Copyright © 1999 DeLorme Yarmouth, ME 04096 Source Data: USGS   150 ft Scale: 1:6,400 Detail: 15-0 Datum: WGS84

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GENERAL SITE DIAGRAM	
Conservation Chemical Company 6499 Industrial Highway Gary, Indiana	
Scale: see above	Date: January, 2002
KPR Project No. 17094	FIGURE 2-1

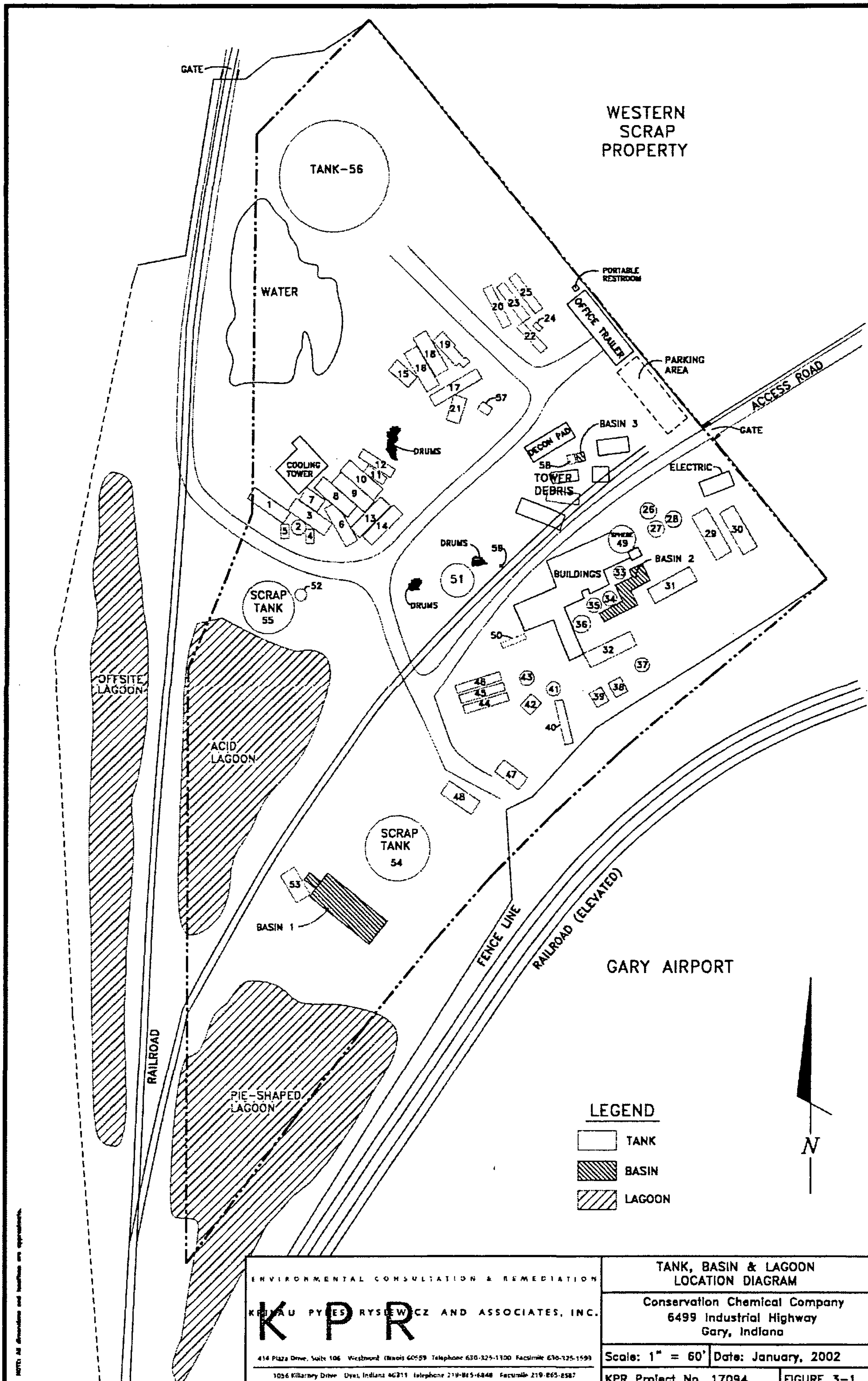
3.0 SITE INVESTIGATION/REMEDIATION ACTIVITIES

Present at the site were various sized aboveground storage tanks, three (3) basins, a multitude of drums, labpacks, three (3) lagoons, potential asbestos containing materials, monitoring wells, and aboveground structures. Each one of these items required further inspection and evaluation to determine the presence of hazardous materials. Prior to performing any of the on-site investigative activities, however, all areas that contained potential physical hazards were clearly identified as such through the use of caution tape, barricades or other warning barriers.

Once the materials encountered were identified and properly characterized, they were either removed off-site for appropriate disposal or treated on-site to non-hazardous levels for final disposition on the property. The specific site investigation and remedial activities performed are summarized in the following sections:

3.1 Storage Tanks

All storage tanks on-site were physically inspected to determine their integrity and contents. As a result of the inspection, a total of 59 tanks were identified. The approximate location of each tank on the site is depicted in Figure 3-1. Some of these tanks had been previously cut and cleaned but had accumulated rainwater, while others still contained potentially hazardous materials or were empty. A representative sample of the contents in each previously cleaned storage tank was obtained and analyzed for pH and total cyanide. For tanks with unknown contents, a representative sample from each was obtained for hazcat analyses. If a material was determined to be non-hazardous by the hazcat procedures then a second representative sample was analyzed for pH, total cyanide, TCLP metals, volatile organic compounds (VOC's), semi-volatile organic compounds (SVOC's), and PCB's to verify the non-hazardous classification. Once all the tanks were sampled and the contents properly characterized, the contents were removed from each tank and the tanks cleaned. Ultimately, the tanks were sent off-site to a scrap metal recycler (Bethlehem Steel, Burns Harbor, Indiana or Gaby Iron & Metal, Chicago Heights, Illinois) or if rubber lined to a landfill (Newton County Landfill, Brook, Indiana) for disposal as a non-hazardous waste. Two of the tanks were of fiberglass construction. After cleaning, they were both crushed and the resulting debris sent to a non-hazardous landfill (CID-RDF, Chicago, Illinois). A detailed inventory was developed which identifies each tank encountered on the CCCI site, provides an estimate of the volume or quantity of



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TANK, BASIN & LAGOON LOCATION DIAGRAM

Conservation Chemical Company
6499 Industrial Highway
Gary, Indiana

Scale: 1" = 60' | Date: January, 2002

KPR Project No. 17094 | FIGURE 3-1

wastes in each tank, and lists the final disposal site for the contents and the tank. A copy of that inventory appears in Appendix B. Copies of the manifests and certificates of destruction documenting the hazardous contents from each tank along with the manifests documenting the non-hazardous contents are also included in Appendix B.

In summary, the total amounts of each category of waste found in the tanks are presented below.

<u>SUMMARY OF TANK WASTES</u>

Hazardous Liquids
- Acids .... 54,305 gallons
- Alkalines .... 35,368 gallons
- Caustics .... 3,865 gallons
- Chrome/Cadmium .... 1,255 gallons

Hazardous Solids
- Methylene chloride, n-butanol, etc. .... 24 cubic yards
- Methylene chloride, n-butanol, etc .... 1,600 gallons*
- Ferric chloride .... 3 cubic yards
- Trichloroethylene .... 25.11 tons
- Lead/chlordane .... 165 gallons*

*(*Manifested in gallons although waste was solid in form)*

Non-hazardous Petroleum Contaminated Soil .... 472.39 tons

Non-hazardous Refactory Brick .... 29.33 tons

Non-hazardous Oily Solid .... 385 gallons

Non-hazardous Oil .... 85 gallons

Non-hazardous Sludge .... 55 gallons

PCB Liquid .... 660 gallons

3.2 Basins

Two (2) individual concrete basins containing liquids and sludges were originally identified on the CCCI site. During the performance of the remediation activities, a third basin containing waste materials was encountered. The approximate locations of the original basins (Basin-1 and Basin-2), along with the additional basin (Basin-3), are identified on Figure 3-1.

Initially, representative samples of the liquids and sludges from each basin were both obtained for hazcat analyses. If the materials were determined to be non-hazardous by the hazcat procedures, as was the case for both the Basin-1 and Basin-2 samples, a second set of samples was analyzed for pH, total cyanide, TCLP metals, VOC's, SVOC's, and PCB's to verify the non-hazardous classification. The second set of samples obtained from Basin-1 and Basin-2 confirmed that both the liquid and sludge contained in Basin-2 and the liquid in Basin-1 were non-hazardous. The sludge from Basin-1, however, was determined to be hazardous. Copies of the analytical reports for the second set of samples are included in Appendix C.

The hazcatting procedures performed on the liquid and sludge contained in Basin-3 determined that those materials were hazardous.

As a result of the waste characterizations performed, it was determined to perform the following remedial activities on each basin:

<u>BASIN-1</u>

Liquid - A total of 9,200 gallons of the liquid was pumped and removed from Basin-1. The non-hazardous liquid was disposed of at CID-RDF's biological water treatment facility.

Sludge - The sludge was required to be stabilized by mechanically mixing the material with Omni Material's cement kiln dust. After stabilization was completed, a total of 584.52 tons of hazardous waste solid was disposed of at the EQ's Michigan Disposal Waste Treatment Plant located in Bellville Michigan.

After all materials had been removed, the basin was cleaned. The cleaning activities resulted in the generation of 680 gallons of hazardous waste liquid. This waste was disposed of at Clean Harbors, Inc. located in Chicago, Illinois (Profile No. CH143756). The basin was subsequently backfilled with imported aggregate material and leveled to grade.

Copies of the manifests and certificates of destruction documenting the disposal of the hazardous solid waste and liquid and the manifests documenting the disposal of the non-hazardous liquid waste are included in Appendix C.

BASIN-2

Since both the liquid and sludge materials found in Basin-2 were determined to be non-hazardous, the materials were left within Basin-2. During the leveling/grading of the site, the basin was filled in with crushed cinder block and imported aggregate stone and leveled to grade.

BASIN-3

Liquid - A total of 3,500 gallons of hazardous liquid was pumped and removed from Basin-3 and disposed of at Clean Harbors/Chicago, Illinois (Profile No. CH144068).

Sludge - The amount of residual sludge that was removed from Basin-3 was not uniquely quantified since it was compatible with and was ultimately combined with the waste contained in Tank No. 51. The total amount of hazardous waste solids removed from Tank No. 51 was 24 cubic yards which was disposed of at Clean Harbors/Kimball, Nebraska.

Copies of the manifest and certificate of destruction documenting the disposal of the liquid hazardous waste are also included in Appendix C.

After all material had been removed, the basin was cleaned. The cleaning activities resulted in the generation of a small volume of hazardous waste liquid. This liquid was also placed into Tank No. 51. After the basin had been cleaned, it became apparent that it was constructed of unlined metal and not concrete as originally thought. Therefore, the cleaned steel basin was excavated, cut and sent off-site to Bethlehem Steel for metal recycling. The resulting excavation was backfilled with imported aggregate material and leveled to grade.

3.3 Drums

3.3.1 Aboveground Drums

A large number of abandoned 55 gallon drums were present aboveground at the site. The majority of these drums were previously staged by others in designated areas, however, additional drums were discovered during the performance of the on-site remedial activities. A total of 165 drums were ultimately encountered. Some of these drums were empty, a few contained general rubbish, while the majority contained potential hazardous materials. A representative sample was obtained from each drum containing potential hazardous materials for hazcat analysis to assess the viability of bulk loading and subsequent disposal of the wastes. Based on the information resulting from the drum investigation and the hazcat procedures, the drums were segregated into the following categories and waste streams and disposed of as listed.

Category	Total Number of Drums	Amount of Waste	Final Disposition of Wastes
Hazardous Waste Solid* (Tetrachoroethane, xylene)	46	13 cubic yards	Clean Harbors (Profile No. CH144097)
Hazardous Waste Solid* (Toluene, TCE)	67	13 cubic yards	Clean Harbors (Profile No. CH144098)
Hazardous Waste Liquids	38	Unknown	Combined with wastes in Tank No. 51 and disposed of at Clean Harbors
Trash	3	Unknown	CID-RDF Landfill
Empty	11	----	----

* Some of these drums also contained a liquid portion. These liquids were initially drained off and combined with the wastes in Tank No. 51.

After cleaning, the salvageable drums were crushed and sent to Bethlehem Steel as miscellaneous scrap metal for recycling. Copies of the manifest and certificates of destruction documenting the disposal of the hazardous wastes from the drums are included in Appendix D.

3.3.2 Buried Drums

One of the activities outlined to be performed in the Work Plan was a magnetometer study on the eastern one-third of the site to detect any buried drums or tanks in that area. While performing test pit trenches in that area, however, a significant number of underground pipes were encountered. EPA, therefore, agreed to waive the requirement of performing the magnetometer study because of those interferences. Instead of the study, the PRP's were directed to perform a subsurface investigation in other areas of the site. These areas were generally located near Tank Nos. 55 and 56, the vicinity of the former wooden cooling tower, and by the roadway near the decontamination pad. During this investigation, a significant amount of buried drums and containers potentially containing hazardous materials were encountered. The buried drums were excavated and staged on a plastic liner, along with any other orphaned drums encountered during the performance of other subsurface activities such as soil removal or lagoon stabilization. Representative samples of the drummed material were obtained and analyzed to characterize the material. As a result, some of the material was determined to be hazardous. The staged material was ultimately shredded and segregated into either a hazardous or non-hazardous pile. A total of 111.18 tons of non-hazardous shredded drum debris, primarily consisting of empty steel drums, drum lids and rings, and plastic drum liners, was disposed of at the CID-RDF landfill (Profile No. JF027). A total of 60 cubic yards of shredded hazardous waste solid debris was disposed of at EQ's Michigan Recovery Systems disposal site (Approval No. 051600EAC). Copies of the manifests and certificates of destruction documenting the disposal of the hazardous waste materials and the manifests documenting the disposal of the non-hazardous waste materials are also included in Appendix D.

3.4 Labpacks

As a result of prior investigation activities performed by others on the CCCI site, approximately five (5) labpacks containing small quantity containers of hazardous chemicals were present. These labpacks, along with the small quantity of additional hazardous chemicals discovered during the investigation of the property, demolition of structures, and excavation activities, were repackaged as labpack items by Clean Harbors, Inc. A total of 32 fiberglass containers containing variable amounts of waste flammable solids, flammable and corrosive liquids, oxidizing liquids, acids, and paints were ultimately removed from the site and disposed of at Clean Harbors (Profile No. CH144200). Copies of the manifests and certificates of destruction documenting the disposal of these wastes are included in Appendix E.

3.5 Lagoons

The three (3) lagoon areas subjected to this Order are depicted in Figure 3-1 and are identified as the "pie basin" lagoon, "acid" lagoon, and "off-site" lagoon. Initially, an investigation was conducted to determine whether further stabilization of each lagoon was required. In accordance with the procedures outlined in the Work Plan, a total of eight (8) representative samples from the pie-shaped lagoon, six (6) representative samples from the acid lagoon, and four (4) representative samples from the off-site lagoon were obtained. These samples were each analyzed for total and hexavalent chromium, TCLP metals, and PCB's. Further stabilization would be deemed necessary if the TCLP chromium level exceeded 5 mg/L, the hexavalent chromium level exceeded 200 ppm, and/or the sludge material in any of the lagoons contained excess water. As a result of the initial characterization sampling performed, it was determined that some of the sludge in the pie-shaped lagoon was hazardous while the sludges in both the acid and off-site lagoons were non-hazardous. None of the sample results indicated the detection of PCB's (>50 ppm) or any other contaminants of significant concern. However, all the sludge in the acid and off-site lagoons required some stabilization because of the obvious water content.

A treatability study was performed to determine the additional neutralization requirements. The treatability study consisted of combining representative portions of the lagoon samples with varying percentages of several alkaline stabilizing agents. As a result of the study, it was concluded that the mixture of 10% lime kiln dust and 90% sludge would render the sludge non-hazardous and of suitable structural integrity to be left on-site. It should be noted that the entire off-site lagoon and portions of the acid and pie-shaped lagoons were not on the CCCI property. Once all the off-site materials were adequately stabilized, EPA agreed to allow this material to be placed on the CCCI site in the northwest corner near the former location of Tank No. 56, in the vicinity of Basin-1, and also upon the on-site portions of the acid and pie-shaped lagoons.

Utilizing a track hoe, the sludge materials in all three (3) lagoons were mechanically mixed with lime kiln dust supplied by Omni Materials. After stabilization of the materials in each lagoon was apparently complete, representative samples from each lagoon were obtained to document the adequacy of the stabilization. Specifically, four (4) representative samples along with two (2) duplicate samples were obtained from the off-site lagoon for TCLP and hexavalent chromium analyses. Based on these results, it was determined that the sludge in the off-site lagoon had been adequately stabilized since the acceptable levels for TCLP chromium and hexavalent chromium were not exceeded. The stabilized sludge was subsequently loaded into a dump truck, shuttled to the northwest corner of the property and placed in approximately one foot lifts upon a prepared clay surface. The bottom of the off-site lagoon was restored to original grade with a layer of 3 inch rock. The sidewalls of the lagoon were seeded and/or secured with erosion control blankets.

A total of four (4) representative samples along with one (1) duplicate sample were obtained from the acid lagoon to document the adequacy of stabilization. The analytical results for TCLP and hexavalent chromium were also well below the acceptable levels for each analyte. The stabilized sludge in the off-site portion of the acid lagoon was transferred and placed in one foot lifts on the stabilized portion of the acid lagoon on the CCCI property. The bottom of the off-site portion of the acid lagoon was lined with a layer of 3 inch rock. The sidewalls of this portion were seeded and/or secured with erosion control blankets.

The pie-shaped lagoon, which contained hazardous material, required several iterations of stabilization and subsequent additions of both fly ash and ferric chloride in some areas to ultimately demonstrate acceptable concentration levels. However, when the specified levels were achieved in each of the ten (10) subdivided areas of the lagoon, the off-site portions were placed on the CCCI property either near Basin-1 or on the stabilized on-site portions of the acid and pie-shaped lagoons. The off-site portion was backfilled to original grade with 3 inch rock to promote drainage and to support the EJ & E railroad embankment.

The analytical results of the final documentary samples obtained for each lagoon are tabulated below:

Lagoon	Sample I.D.	TCLP Chromium Concentration (mg/L)	Hexavalent Chromium Concentration (mg/kg)
Off-site	5-1	0.350	27
	5-1D	0.344	<15
	6-1	<0.040	<15
	7-1	0.417	<15
	7-1D	0.393	21
	8-1	0.908	15
Acid	9-1	0.602	19
	10-1	0.076	22
	10-1D	0.166	30
	11-1	0.233	27
	12-1	0.290	<15
Pie-shaped	13-1	>5.0	<1.4
	13-4*	4.32	<14
	13-6	3.77	<14
	13-6D	3.42	<14
	14-1	>5.0	34
	14-4	4.76	118
	14-4D	4.76	123
	15-1	>5.0	36
	15-3	3.56	—
	15-3D	3.39	—
	16-1	>5.0	<1.4
	16-4	3.99	<14
	16-4D	3.93	23.3
	17-1	>5.0	<1.4
	17-1D	3.6	<1.4
	17-4	3.80	<14
	17-4D	3.42	17
	18-1	2.5	<1.4
	19-1	4.23	<1.4
	20-1	0.20	<1.4
	21-1	0.093	<1.4
	22-1	0.28	<1.3

*During the lagoon documentation sampling, EPA periodically split samples and conducted their own independent analysis. Since the EPA split sample for 13-4 was >5.0, this sample was deemed not acceptable.

The stabilized sludge from all lagoons was capped with at least two feet of clay and 3 inches of topsoil. The capped areas were subsequently seeded to promote vegetation growth that would inhibit erosion and assist in keeping the clay surface intact.

Diagrams depicting the approximate sampling locations in each lagoon with the corresponding analytical results for both initial characterization and final documentary closure are included in Appendix F.

3.6 Asbestos Containing Material (ACM)

An ACM assessment was initially performed at the site to identify all potential ACM on the property since potential ACM in the forms of piping/equipment insulation, building materials, and tank coatings was observed. Fourteen (14) potential ACM materials in various locations were ultimately sampled and analyzed for asbestos content. A copy of the analytical report documenting the analyses is included in Appendix G. A tabulated summary of the representative samples obtained and whether or not the particular material tested was ACM is presented below:

Location/Material	ACM Determination
Tank No. 3/Exterior Coating	Yes
Tank No. 11/Insulation	Yes
Tank No. 8/Exterior Coating	Yes
Tank No. 18/Exterior Coating	Yes
Cooling Tower Panels	Yes
Tank No. 26/Exterior Coating	Yes
Tank No. 27/Exterior Coating	Yes
Tank No. 28/Exterior Coating	Yes
Tank No. 33/Exterior Coating	Yes
Transite Wall Panels	Yes
Tank No. 38/Brick Liner	No
Tank No. 39/Brick Liner	No
Cyanide Tower Insulation	Yes
Tank No. 14/Exterior Coating	Yes

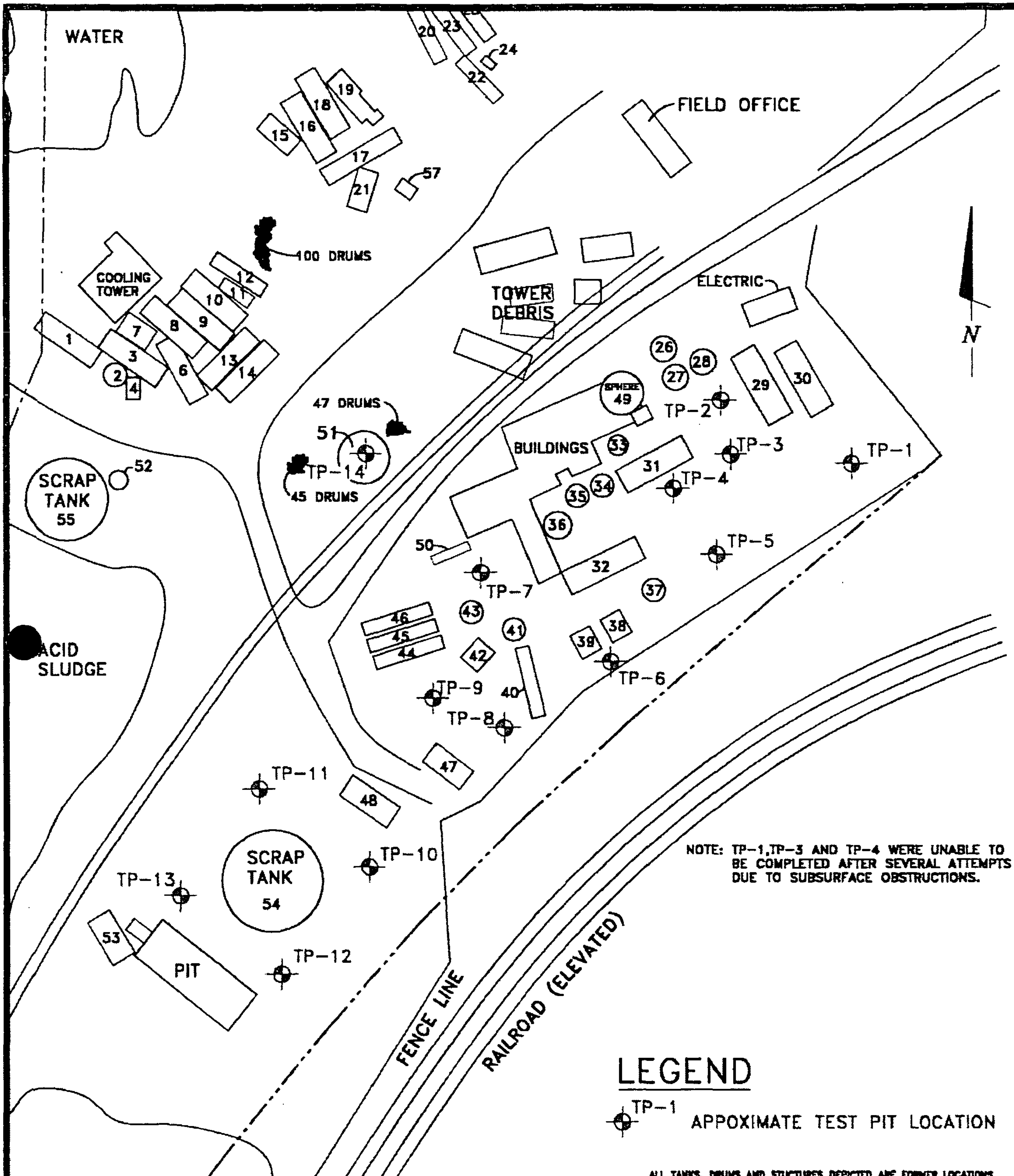
Based on the results of the ACM investigation, all materials verified to be ACM were removed by a licensed contractor after proper notifications were made, as required, to IDEM. Copies of the notifications are included in Appendix G.

All ACM removal was performed prior to the dismantlement or demolition of the aboveground structure or tank having ACM. A total of 275 bags (estimated to be approximately 30 cubic yards) was accumulated in a secured container during the abatement effort and was ultimately disposed of at the Newton County Landfill located in Brook, Indiana. A copy of the waste profile sheet, approval letter, and manifest documenting the disposal are also included in Appendix G.

3.7 Extent of Contamination

Originally, an investigation to determine the extent of residual contamination in the surface and subsurface soils was to be performed on the eastern one-third of the site and in selected "hot spot" areas in the tank and drum storage areas. This investigation was to be performed by advancing a total of fourteen (14) soil borings. However, EPA and the PRP's instead agreed to perform the investigation by excavating fourteen (14) test pits, each to a depth of 7 feet, at the originally proposed locations of the soil borings. While excavating, numerous underground impediments were encountered such as old building foundations and underground pipes which were believed to be remnants of the Berry Oil Refinery Co. operation, the occupant of the property prior to CCCI. These impediments prevented the excavation of test pits at three (3) locations. At the other eleven (11) locations, however, a representative sample of the most contaminated area, based on field observations, was obtained from each test pit. These samples were each analyzed for PCB's, total cyanide, TCLP metals, TCLP VOC's and TCLP SVOC's. The locations of the samples are depicted in Figure 3-2. The results of the analytical results indicated hazardous concentrations of trichloroethene at TP-12 (near Basin-1) and TP-14 (near Tank No. 51) and of lead at TP-5. Because the lead result at TP-5 was believed to be an anomaly, this location was resampled again for lead. Since the second sample at TP-5 did not confirm the presence of a hazardous level of lead, lead was no longer considered an issue at this location. A summary of the analytical results obtained along with the supporting analytical reports are included in Appendix H.

At the request of EPA, the PRP's agreed to excavate and properly dispose of a limited amount of soil near Basin-1 and from beneath Tank No. 51. As a result, a total of



ENVIRONMENTAL CONSULTATION & REMEDIATION
KPR
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414 Plaza Drive, Suite 106 Westmont Illinois 60559 Telephone 630-325-1300 Facsimile 630-325-1593
1056 Killarney Drive Dyer, Indiana 46311 Telephone 219-865-6848 Facsimile 219-865-8567

TEST PIT LOCATION DIAGRAM

Conservation Chemical Company
6499 Industrial Highway
Gary, Indiana

Scale: 1" = 60'	Date: January, 2002
KPR Project No. 17094	FIGURE 3-2

152.82 tons of hazardous waste soil were excavated and disposed of at EQ's Michigan Disposal Waste Treatment Plant (Approval No. 021600MJ). Copies of the manifests and certificates of destruction documenting the disposal of this waste are included in Appendix H. The resulting excavations were backfilled to grade with imported aggregate material.

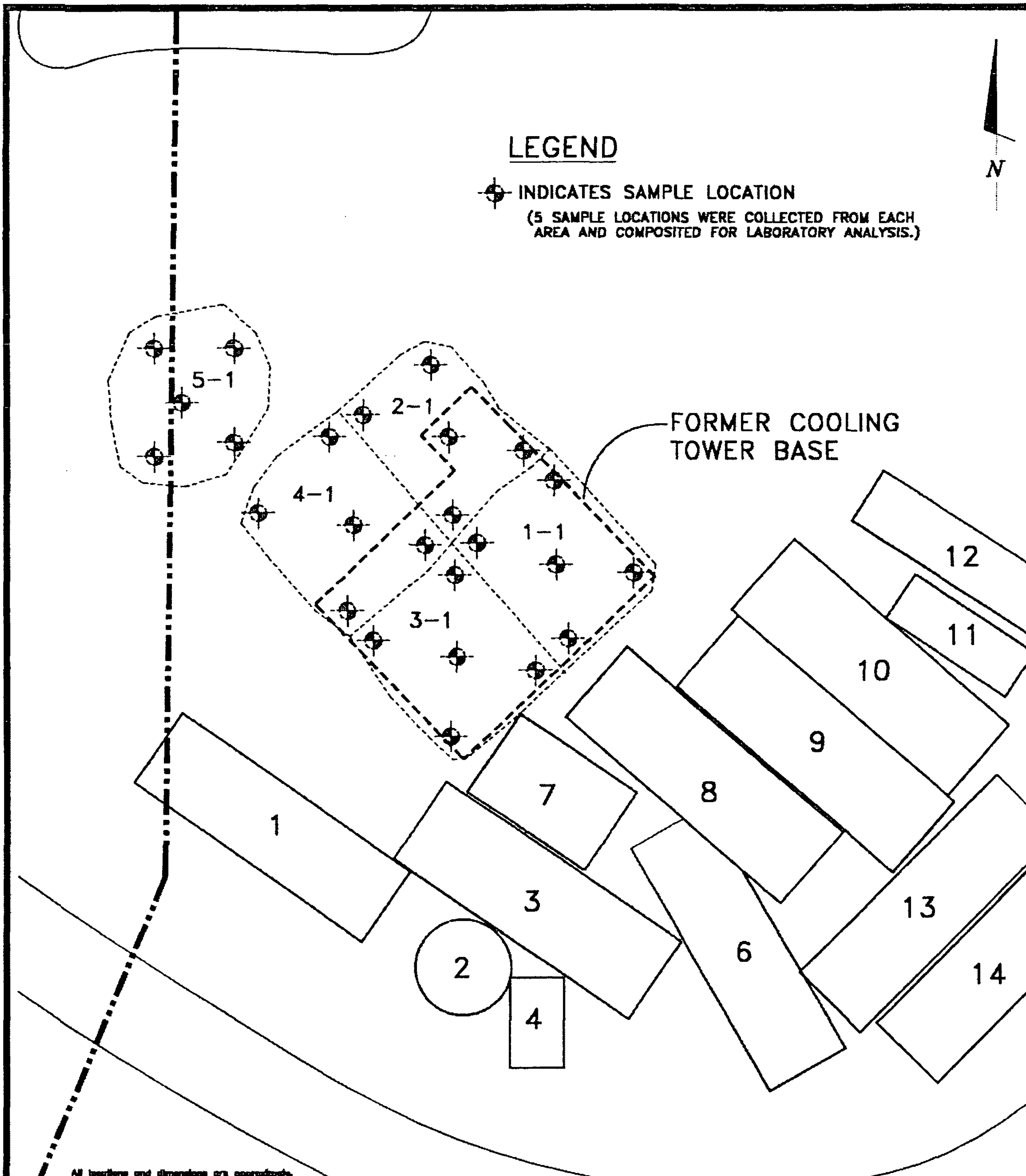
Also at the request of EPA, the PRP's agreed to perform surficial and subsurface sampling beneath and in the vicinity of the former wooden cooling tower. A total of ten (10) composite samples were obtained from the areas depicted in Figure 3-3. Five of the samples were obtained from the surface while the remaining five samples were obtained from a depth of 3 feet. An additional surficial soil sample was obtained near the vicinity of Tank Nos. 26, 27, and 28 and one north of Basin-1. All of the samples obtained were analyzed for total, TCLP and hexavalent chromium. The results of the analyses indicated that no hazardous levels of either chromium or hexavalent chromium were detected and, therefore, the material in each area was allowed to be left in place. A copy of the laboratory report documenting the analytical results is included in Appendix I.

3.8 Groundwater Monitoring Wells

A site investigation and a review of pertinent records were performed to identify and locate the groundwater monitoring wells present at the site. A total of ten (10) wells were identified. The approximate location of each well is depicted in Figure 3-4. Each well was closed utilizing applicable methods prescribed and defined by the Indiana Department of Public Health and in accordance with IDEM regulations (310IAC 16-10-2). The closure method utilized over-drilling and included sealing each well with an impervious bentonite/cement mixture that was placed using the tremie-pipe method, removal of aboveground monitoring well appurtenances, and the completion and submittal of Indiana State Form No. 35680 to document the proper closure of each well. Copies of the forms filed with the Indiana Department of Natural Resources are included in Appendix J.

3.9 Containment Barrier/Sewer Pipe

One of the original requirements in the Order was to install a containment barrier along the southeast border of the site to control petroleum migration off-site. While performing test pit excavations in that area, numerous underground pipes and



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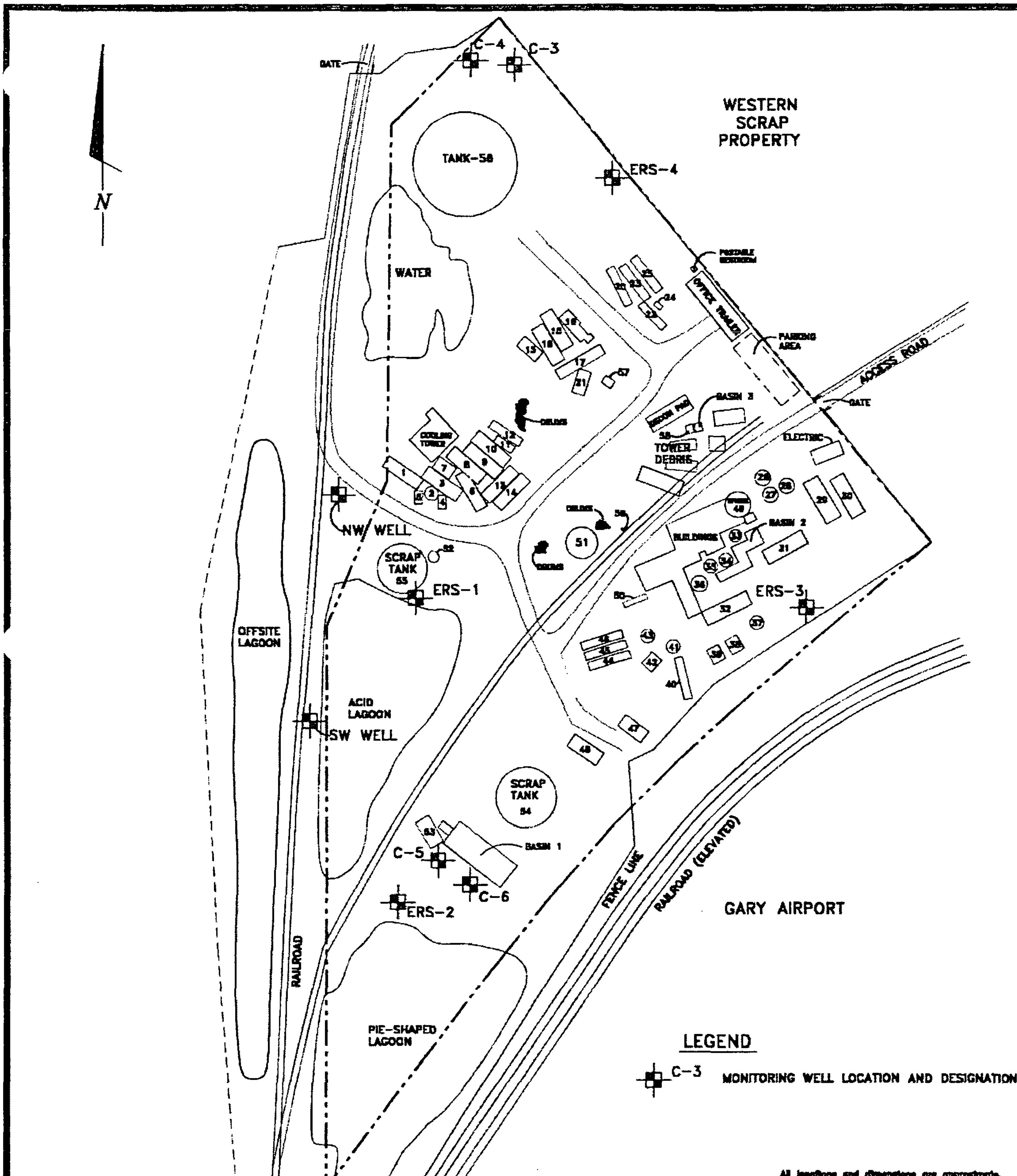
WOODEN COOLING TOWER SAMPLE LOCATION DIAGRAM

Conservation Chemical Company
6499 Industrial Highway
Gary, Indiana

Scale: 1" = 10'	Date: January, 2002
KPR Project No. 17094	FIGURE 3-3



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MONITORING WELL LOCATION DIAGRAM

Conservation Chemical Company
6499 Industrial Highway
Gary, Indiana

Scale: 1" = 100'	Date: January, 2002
KPR Project No. 17094	FIGURE 3-4

subsurface foundations were encountered. It was jointly determined between EPA and the PRP's that the proposed installation was no longer feasible. An alternate strategy was developed to reduce the potential for petroleum migration to the Gary/Chicago Airport property located directly across the EJ & E railroad tracks. This strategy, which negated the need for the containment barrier, included the installation of a drainage pipe in a ditch at the north end of the runway on airport property. The main section of the pipe, totaling approximately 1,120 linear feet, was constructed using 36-inch diameter concrete pipe. Three (3) 24 linear feet long tributaries using smaller diameter concrete pipe (24-inch and 18-inch) were installed to connect at new manholes in identified drainage areas. In addition, six (6) clay checks were constructed at approximately 200 foot intervals along the main section of the pipe to control petroleum migration. A test port was installed upstream of each clay check to monitor for the presence of oil and to allow for the pumping and removal of any oil that may be encountered. The installation was designed by the Gary/Chicago Airport's Engineer (Ken Ross) to assure that construction was in accordance with Federal Aviation Administration (FAA) requirements. A diagram depicting the sewer installation along with the formal certification signed by Ken Ross that all applicable FAA construction requirements were met are included in Appendix K. This work was completed by November 30, 2001 and marked the completion of the remedial activities of this Work Plan.

3.10 Miscellaneous Material, Waste and Debris Removal

Included in the remedial activities performed at the CCCI site were the following activities:

- Demolition and removal of the wooden cooling tower, several buildings, tank supports, overhead piping, a wooden flatbed truck trailer, and a tractor.
- Excavation and removal of the railroad spur running approximately through the center of the CCCI site.
- Removal of non-hazardous debris and trash.
- Removal of salvageable scrap metal.
- After all field activities on the CCCI site were completed, cleaning and removal of the decontamination pad.

As a result of these activities, the following amounts of materials were removed from the site:

• Construction and demolition debris/trash	215 cubic yards to CID-RDF 139.56 tons to CID-RDF 92.4 tons to Newton County Landfill
• Rubber lined scrap steel	258.96 tons to Newton County Landfill
• Railroad ties	63.25 tons to Newton County Landfill
• Tractor motor oils	85 gallons to Clean Harbors, Inc. Spring Grove Resource Recovery Cincinnati, Ohio (Profile No. CH144198)
• Scrap metal for recycling	427 net tons to Bethlehem Steel 3.05 net tons to Gaby Iron & Metal
• Concrete for recycling	4 truckloads to Bob Heine, Inc. (Gary, Indiana)
• Discarded tires	Approximately 100-125 tires found on-site were quartered and sent either with the shredded drum wastes to CID-RDF, the Basin-1 solids to EQ's Michigan Recovery Systems, or to Newton County Landfill

3.11 Documentary Photographs

Copies of pertinent photographs documenting significant observations, activities performed or on-site conditions are included as Appendix L.

4.0 SAMPLING AND ANALYSIS PLAN

The Sampling and Analysis Plan described within the Work Plan was utilized to define the sampling and data gathering methods implemented during the site investigation and remedial activities. This plan also identified the physical and chemical analyses that were performed.

4.1 Sampling Objective

The primary data uses of the various samples obtained at the site during the implementation of the Work Plan were for site investigation, source characterization, hazard determination, disposal profiling, and treatment effectiveness.

4.2 Sampling Procedures

In accordance with the Work Plan or EPA directives, sampling of various tanks, containers, materials, and a variety of medias such as air, liquid, solid and sludge were undertaken. The sampling was performed in accordance with EPA-approved methodologies utilizing clean sample containers provided by the approved laboratory (TestAmerica, Bartlett, Illinois) and required sampling equipment, including but not limited to bailers, buckets, stainless steel spoons, track hoes, pumps, knives, etc. To reduce the potential for cross contamination, each sample was obtained with either disposable sampling equipment or equipment that had been properly decontaminated beforehand. All wastes generated on-site during sampling activities and sampling equipment decontamination were properly containerized, sampled for characterization determination, and managed in accordance with applicable regulations. All samplers wore the requisite personal protective equipment (PPE) during each sampling episode. Appropriate notification was made to EPA, as required by the Order, in advance of any sample collection activity.

4.3 Sample Designation

The sample identification system developed and utilized for this project included the following sequential information:

- Name of site - CCCI site (CCCI)
- Sample source - Tank (T), Drum (D), Basin (B), Labpack (L), Lagoon Sludge (LS), Test Pit (TP), Cooling Tower (CT)

- Source description - Identification number assigned to each sample source
- Sample number - Sequential number to distinguish multiple samples obtained from each specific source
- QA/QC modifiers - Duplicate (D), Trip Blank (TB)

All field samples were identified with sample identification labels that included the above sample identification and the following additional information:

- Name of sample collector;
- Affiliation of collector;
- Date and time of collection; and
- Analysis request

A chain-of-custody record was completed and accompanied each shipment of sample(s) to the laboratory.

5.0 QUALITY ASSURANCE PLAN (QAP)

A detailed QAP was presented with the Work Plan. The Data Quality and Quality Assurance Objectives outlined within that QAP were intended to ensure that the data collected were sufficient and were of adequate quality for their intended use at the CCCI site. The primary data uses were for source characterization, hazard classification (hazcatting), disposal profiling and evaluation of remedial treatment activities, as well as for health and safety measures.

5.1 Level of QC Effort

Since the laboratory analyses were performed in accordance with EPA procedures and methodology, it is believed that the requisite level of Quality Assurance (QA) and Quality Control (QC) were met.

Data comparability was demonstrated by obtaining duplicate samples. The guideline followed for replicate sampling was to include one (1) duplicate sample for each group of at least five (5) but not greater than twenty (20) samples for all matrices. In some instances, however, a duplicate sample was obtained even when the sample quantity was less than five (5). A trip blank was included with the initial shipment of VOC samples obtained during the test pit sampling, however, no documentary closure sampling for VOC's was either required or performed during the implementation of the Work Plan remedial activities. It should be noted that the specified QA/QC sampling was also not required for waste characterization or classification, treatability testing or disposal profiling. It should also be noted that during certain sampling episodes, data comparability was also verified by EPA through split sampling.

5.2 Data Validation

The selected laboratory utilized for this project (TestAmerica) performed in-house analytical data reduction and validation under the direction of the respective laboratory QA supervisor. The laboratory review included checks for the attainment of QC criteria as outlined in applicable EPA procedures and methods. The validity of analytical data was also assessed by comparing the analytical results of duplicate samples.

Additionally, the laboratory critiqued their own analytical programs by using spiked additional recoveries, established detection limits, precision and accuracy control charts and by keeping accurate records of the calibration of instruments.

Corrective action, if it was determined to be required by audit results or detection of unacceptable data included, but was not limited to, the following:

- Accepting data with an acknowledged level of uncertainty.
- Eliminating outliers identified by the validation task.
- Re-analyzing samples if holding time criteria was not exceeded.
- Re-sampling and analyzing site areas in question.
- Evaluating and amending sampling and analytical procedures.

In addition, the data obtained for documentary samples was further scrutinized by an independent third party data validation firm, Environmental Science and Engineering, Inc. (ESE) located in St. Louis, Missouri. ESE was routinely requested to review and critique the analytical reports prepared by TestAmerica for documentary closure sampling performed at the CCCI site. Copies of ESE's reviews were provided to EPA during the course of this project and are hereby included in Appendix M of this report.

When concerns or questions regarding analytical data were raised by ESE, every reasonable effort was undertaken to provide a suitable explanation that would clarify a misconception or rectify the anomaly. Obviously, however, some sampling and subsequent analysis could not be reproduced because of the dynamic nature of the ongoing remedial activities at the CCCI site.

In summary, it was concluded that the pertinent analytical data obtained included within this report was of sufficient quality to successfully validate and substantiate the integrity of the analytical results obtained within the scope of the Work Plan.

6.0 HEALTH AND SAFETY

6.1 Objective Statement

The health and safety of each Company's and/or Agency's workers, contractors, and visitors at the CCCI site were of the highest priority. It was the policy of the PRP's, the Project Safety Officer (PSO), and the OSC to provide a safe and healthful work place for each Company's and/or Agency's workers, contractors, and visitors through the establishment of safety rules, procedures, and programs that were strictly and uniformly enforced. As a result, each Company's and/or Agency's workers, contractors, and visitors complied with the applicable federal, state, and local safety standards, codes, and regulations throughout the duration of the CCCI project.

6.2 Responsibilities

6.2.1 Project Safety Coordinator

The PSO, or designated backup PSO, was responsible for the daily supervision of all health, safety, decontamination, and monitoring activities associated with each phase of the CCCI project. The PSO was responsible for informing and training contractors and their employees in the specific hazards, work methods, emergency procedures, and personal protective equipment that were required during their work.

As part of this responsibility, the PSO was also responsible for enforcing the provisions of the Health and Safety Plan developed within the Work Plan and site specific safety rules and procedures. The PSO was provided with the authority to stop work activities deemed to be unsafe or dangerous. The PSO worked closely with the OSC to assure that operations were performed in a safe and efficient manner.

6.2.2 Contractors

Contractors were responsible for complying with the requirements of the Health and Safety Plan and for following the specific instructions of the PSO. The contractor's on-site supervisor ensured that his employees followed all applicable rules and procedures identified in the Health and Safety Plan and by the PSO.

6.2.3 Site Workers

All persons working at the CCCI project were required to comply with the requirements of the Health and Safety Plan and the instructions provided by the PSO. Regarding safety consideration, site workers were responsible for:

- Only performing jobs for which they had specific training
- Following prescribed safety rules and regulations
- Using required personal protective equipment
- Reporting all unsafe conditions/work practices that they were aware of
- Reporting all injuries to their supervisor, no matter how minor

6.3 Project Hazard Identification & Protection

Many chemical and physical hazards were present at the CCCI site. Those specifically identified during the implementation of the Work Plan included the presence of hazardous/toxic chemicals and materials, such as acids, caustics, cyanide, organic solvents, asbestos, chrome and other RCRA metals, and PCB's, in solid, liquid, and/or gaseous forms.

A variety of physical hazards were also present. These hazards were treated to be as potentially dangerous as the chemical hazards and included, fall hazards, electrical hazards, excavation related hazards, confined space hazards, heavy equipment related hazards, demolition hazards, noise, and temperature extremes.

6.4 Project Safety Procedures

Site specific procedures were developed to minimize the exposure to adverse impacts from the chemical and physical hazards present at the site. To that end, the following general safety rules were strictly adhered to:

- All persons entering the site were required to register with the on-site security firm.

- All persons granted access to the site were required to read the site Health and Safety Plan and certify that they understood and would comply with its requirements.

- All persons entering the site were required to comply with the requirements in the Health and Safety Plan and the instructions provided by the PSO, OSC, or representatives of the PRP's.

- All persons that entered or worked at the site were made familiar with the location and use of all emergency equipment including fire extinguishers and first aid equipment.

- Persons were required to wear the appropriate respiratory protection and other personal protective equipment while performing tasks at the site.

- All persons that entered or worked at the site made every reasonable effort to avoid contact with potentially hazardous substances unless adequately protected.

- The consumption of food or beverages by any person was strictly prohibited when inside of the exclusion or contamination reduction zones.

- Smoking, matches, lighters, and any other spark or flame producing activity were strictly prohibited within the exclusion or contamination reduction zones.

- Personnel worked in pairs when work required the use of respiratory protective equipment, when any excavation or aboveground structure was entered or while working near or above any pit, lagoon, or liquid containing structure.

- All persons that exited the exclusion and contamination reduction zones were required to wash face and hands immediately.

- Protective equipment such as respirators, boots, gloves, non-disposable clothing were decontaminated or disposed of properly before being removed from the exclusion or contamination reduction zones.

Site and work zone control was created and implemented by maintaining and repairing, as needed, the perimeter fence around the entire site, implementing 24-hour site security, and by establishing exclusion, contamination reduction, and support zones as required. These steps helped to prevent unauthorized access onto the site and minimized or eliminated the transfer of hazardous substances onto the "clean" area of the property.

Visitors and workers were prohibited from entering the exclusion or contamination reduction zones unless the proper protective clothing and respiratory protection was worn.

Additional measures were undertaken at the site to protect workers and enhance site safety by implementing an air monitoring program. The program consisted of initial screening of areas and workers, perimeter and worker exposure monitoring during significant field activities, and atmospheric monitoring for confined space environments. The air monitoring program helped to assure that worker exposure to unsafe environments without the appropriate personal protective equipment was eliminated, helped to identify the necessary health and safety equipment for performing each task, and ascertained if certain work tasks caused any negative impact on the ambient environment. As a direct result of the monitoring, unprotected worker exposure to unsafe environments was eliminated.

Decontamination procedures to both workers and personal protective, sampling, and heavy equipment were implemented and strictly enforced. An overhead shower alongside the formally constructed decontamination pad was routinely utilized to prevent the transfer of contaminants from contaminated to uncontaminated zones. All contaminated disposable equipment and contaminated wash waters resulting from the decontamination of non-disposable equipment were ultimately managed in accordance with applicable regulations.

6.5 Auditing the Effectiveness of the Site Health and Safety Plan

Safety audits were conducted both periodically and prior to the commencement of major activities at the site to assure the effectiveness of the CCCI Site Health and Safety Plan. These audits were designed to determine compliance with the requirements of the Health and Safety Plan along with commonly accepted safety practices. The audits were performed by both the PSO and by an experienced independent health and safety consultant. As a result of the audits, only minor inadequacies were identified and those were promptly corrected. In addition, not one significant injury or adverse health effect occurred during the performance of investigative or remedial activities on the CCCI site.

7.0 MONTHLY REPORTS

As required by the Order, written progress reports were submitted to EPA on a monthly basis. Each report described the significant developments during the preceding period, including the work performed and any problems encountered, analytical data received during the reporting period, and developments anticipated during the next report period, including a schedule of work to be performed, anticipated problems, and planned resolutions of past or anticipated problems. The initial report was prepared for the month of June, 1999 and subsequent reports were written through the month of December, 2001. Copies of all of the reports prepared to date are included in Appendix N.

8.0 PROJECT COSTS

The total cost incurred as of December 31, 2001 to implement the activities outlined within the Work Plan and those modified activities subsequently agreed to by EPA and the PRP's amounted to $2,149,542. Table 8-1 is a detailed project cost summary table, which provides the individual task expenditures on a monthly basis.

TABLE 8-1

CONSERVATION CHEMICAL COMPANY OF ILLINOIS

Costs as of December 31, 2001

Task No.	Task Description	Budgeted Amount	Invoice Period & Amount Invoiced																		
			Jun 99	Jul 99	Aug 99	Sept. 99	Oct. 99	Nov. 99	Dec. 99	Jan. 2000	Feb. 2000	Mar. 2000	Apr. 2000	May. 2000	Jun. 2000	July. 2000	Aug. 2000	Sept. 2000	Oct. 2000	Nov. 2000	Dec. 2000
1	General Site Operations	$750,000	$12,846	$42,092	$47,714	$36,181	$39,037	$43,291	$16,453	$34,417	$30,133	$41,686	$36,200	$60,881	$36,850	$27,492	$10,231	$6,048	$1,368	$4,685	$1,634
2	Site Security	$170,000	$0	$5,709	$12,600	$7,538	$12,082	$9,674	$9,953	$13,541	$9,660	$12,075	$9,660	$7,246	$14,763	$9,953	$0	$0	$0	$0	$0
3	Mobilization	$10,600	$6,894	$2,045	$1,632	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
4	Site Survey	$2,600	$0	$2,591	$0	$0	$0	$0	$906	$0	$0	$0	$0	$0	$0	$722	$0	$0	$0	$0	$0
5	Trash Disposal	$61,000	$0	$26,890	$2,342	$3,992	$7,917	$3,506	$1,314	$0	$0	$845	$0	$0	$125	$0	$0	$0	$0	$0	$0
6	Air Monitoring	$15,000	$0	$4,860	$1,458	$0	$0	$0	$0	$500	$0	$1,050	$0	$0	$0	$0	$0	$0	$0	$0	$0
7	Previously Cleaned Tanks	$32,000	$3,728	$12,791	$15,495	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
8	Tanks & Basins with Wastes	$450,000	$5,593	$21,836	$90,550	$46,557	$41,216	$8,819	$48,462	$47,647	$36,770	$81,712	$0	$0	$0	$0	$0	$0	$0	$0	$0
9	Laboratory Packs	$13,300	$0	$1,179	$12,119	$0	$0	$0	$0	$0	$0	$1,695	$0	$1,458	$0	$0	$0	$0	$0	$0	$0
10	Above Ground Drums	$120,000	$0	$0	$12,743	$6,900	$40,490	$10,465	$11,411	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
11	Lagoons	$163,000	$2,708	$0	$351	$0	$1,369	$0	$0	$0	$41,031	$104,839	$117,185	$67,188	$7,712	$52,582	$596	$0	$0	$0	$0
12	Asbestos	$35,000	$0	$1,748	$23,164	$9,948	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
13	Buried Drums, Eastern 1/3 of site	Not Budgeted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
14	Geophysical Study	$30,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
15	Groundwater Wells	$10,000	$0	$0	$0	$0	$0	$0	$3,611	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
16	Soil Study Eastern 1/3 of Site & Disposal	$40,000	$0	$0	$0	$0	$0	$12,192	$0	$1,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
17	Contaminated Soil Disposal, Eastern 1/3	Not Budgeted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
18	Gary Airport Sewer Installation	$140,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$8,569	$1,081	$0	$0
19	Level & Grade Site	$50,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,372	$874	$35,342	$0	$0	$0	$0	$0	$0
20	Final Report	$27,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
21	Scrap Steel Dismantling	$60,000	$0	$1,800	$44,950	$0	$3,500	$8,502	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
22	Scrap Credit	($37,832)	$0	$0	($27,629)	$0	$0	($8,374)	$0	$0	$0	$0	($1,469)	($122)	$0	($238)	$0	$0	$0	$0	$0
*******	**ADDED ITEMS SINCE WORK BEGAN**																				
23	TCE Contaminated Soils & Liquids	Not Budgeted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
24	Rubber Lined Tanks	$35,000	$0	$0	$11,638	$1,722	$17,877	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
25	Oil Under Tank 56	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
26	Chromate Sludges	$800	$0	$0	$745	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
27	Property Line Fencing	$3,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$22,664	$0	$0	$0	$0
28	Buried Drums, Western 2/3 of site	Not Budgeted	$0	$0	$0	$0	$0	$0	$2,300	$15,641	$0	$1,200	$0	$27,269	$0	$0	$0	$0	$0	$0	$0
29	Reclean Previously Cleaned Tanks	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
30	*OSC Weekly Project Meetings*	*$10,000*	*$0*	*$0*	*$3,515*	*$760*	*$700*	*$700*	*$0*	*$1,000*	*$0*	*$1,000*	*$1,624*	*$375*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*	*$0*
31	3rd Party Data Validation	$15,000	$0	$0	$1,897	$0	$4,298	$0	$0	$0	$0	$0	$595	$541	$978	$627	$0	$0	$0	$569	$0
32	Health & Safety Meetings and Audits	$15,000	$0	$0	$523	$1,368	$0	$0	$0	$601	$656	$0	$0	$1,632	$0	$0	$0	$0	$0	$0	$0
33	Hexavalent Chrome in Lagoons	Not Budgeted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
34	Required 24 hour site security	Not Budgeted	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
	TOTALS	$2,220,468	$31,769	$123,541	$255,805	$114,964	$168,486	$88,775	$94,410	$114,347	$118,250	$246,102	$194,167	$167,340	$95,790	$91,138	$33,491	$14,617	$2,469	$5,254	$1,634

Note: Budget total has been changed to reflect scrap steel credits.

TABLE 8-1 (CONT.)

CONSERVATION CHEMICAL COMPANY OF ILLINOIS

Jan. 2001	Feb. 2001	Mar. 2001	Apr. 2001	May. 2001	June. 2001	Jul. 2001	Aug. 2001	Sept. 2001	Oct. 2001	Nov. 2001	Dec. 2001	Total Invoiced	Amount Remaining	Status of Tasks
$1,122	$0	$526	$0	$290	$303	$136	$0	$264	$3,492	$0	$2,028	$537,419	$212,581	Ongoing/Post Closure Monitoring
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$134,474	$35,526	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$10,571	$29	Complete/Demobilization cost Included In Task 1
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,219	($1,619)	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$46,931	$14,069	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$7,866	$7,134	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$32,014	($14)	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$429,162	$20,838	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$16,451	($3,151)	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$82,009	$37,991	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$395,559	($232,559)	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$34,860	$140	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30,000	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3,611	$6,389	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$13,192	$26,808	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$169,428	($2,028)	$177,050	($37,050)	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$66,588	($16,588)	Complete
$1,950	$6,683	$3,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$11,633	$15,367	Ongoing
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$58,752	$1,248	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	($37,832)	$0	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$31,237	$3,763	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$745	$55	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$22,664	($19,664)	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$46,410	$0	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$9,674	$326	Ongoing
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$9,505	$5,495	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$4,778	$10,222	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Complete
$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	Complete/Included In Task 2
$3,072	$6,683	$3,526	$0	$290	$303	$136	$0	$264	$3,492	$169,428	$0	$2,149,542	$117,336	

9.0 POST REMOVAL SITE CONTROL

For a period of one (1) year after the performance of the activities outlined in this Work Plan, or as otherwise directed by the OSC, post removal site control measures will be implemented. These measures will include maintaining the integrity of the security fence installation surrounding the CCCI site and denying access to the site by securely locking the entrance gates. Access keys have been provided to the OSC and designated representatives of the PRP's.

On a quarterly basis, a representative of the PRP's will inspect the site to determine if the site security fence has been breeched or has deteriorated to the point of requiring repair and, to observe if any unauthorized circumstances have occurred which may have a significant adverse environmental impact on the CCCI site. The inspections commenced the quarter starting December, 2001 and will continue through the three month period ending November 30, 2002.

Any noteworthy observations will be reported in writing to the OSC or his designated representative within seven (7) days.

10.0 CERTIFICATION

Under penalty of law, I certify that, to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of this report, the information submitted is true, accurate, and complete.

Fred G Kirkau
Agent for the 6500 Industrial
Highway PRP Group

1 - 28 - 2002
Date

Subscribed and sworn to me before this 28th day of January, 2002

OFFICIAL SEAL
KELLY A SPADONI
NOTARY PUBLIC, STATE OF ILLINOIS
MY COMMISSION EXPIRES: 10/29/03

Kelly A. Spadoni
Notary Signature

APPENDIX Q

505-0012-036
I. 3
4-8-03

U.S. ENVIRONMENTAL PROTECTION AGENCY
POLLUTION REPORT

I. HEADING

DATE:	April 18, 2003
SUBJECT:	**FINAL POLREP** Industrial Highway/Conservation Chemical Site, Gary, Lake County, IN
FROM:	Steve Faryan, OSC, U.S. EPA, Region 5, ERB, RS1, Chicago, IL
TO:	R.Worley, U.S. EPA, Regional Coordinator ,OSWER .... (worley.ray@epa.gov)
	R. Karl, U.S. EPA, Chief ERB, Chicago, IL .... (karl.richard@epa.gov)
	W. Messenger, U.S. EPA, Chief ESS, Chicago, IL .... (messenger.william@epa.gov)
	A. Marouf, U.S. EPA, H&S, Chicago, IL .... (marouf.afif@epa.gov)
	C. Kawakami, U.S. EPA, ORC .... (kawakami.cynthia@epa.gov)
	V. Mullins, U.S. EPA, ESS .... (mullins.valerie@epa.gov)
	J. Maritote, U.S. EPA, ESS, Chicago, IL .... (maritote.john@epa.gov)
	B. Kush, U.S. EPA, Chief OPA, Chicago, IL. .... (kush.beverly@epa.gov)
	M. Joyce, U.S. EPA. Pubic Affairs .... (joyce.mike@epa.gov)
	USGC Case Officer,NPFC, Washington, DC .... (EPAPOLREPS@Ballston.uscg.mil)
	Paul Karas, Administrator, Gary Chicago Airport .... FAX: 219-949-0573

II. BACKGROUND

CERCLA Site No:	Z590
CERCLIS ID Number:	IND040888992
Delivery Order Number:	3141-25
Response Authority:	OPA/CERCLA
OPA ID Number:	FPN#: 098022
Account Number:	90
NPL Status:	Not on NPL
IDEM Notification:	Yes
Start Date:	Sept 1998
Completion Date:	Pending

III. SITE INFORMATION

A. See POLREP 1-43 for previous U.S. EPA removal actions.

IV. RESPONSE INFORMATION

A. Situation

Construction and start up of the water treatment system was completed the week of March 17, 2003 at the Industrial Highway site. Demobilization of site equipment, personnel, and trailers was completed the week of March 24, 2003. Currently, water and product pumps in all extraction wells are operational as well as all other portions of the treatment system. Oil has been observed in extraction wells XW-1, XW-3, XW-5, and XW-6. Product pumps in these wells have began pumping oil to the treatment building. No oil has been observed in well XW-4 and only trace amounts have been observed in well XW-2. Water pumps in these two wells will continue to operate in order to draw oil into the wells.

2. Completed activities:
Thursday, March 27, 2003, ERRS RM and START mobilized to the Industrial Highway site to gauge groundwater levels in all site monitoring wells and piezometers, as well as wells and piezometers on the airport property. After all wells and piezometers were gauged ERRS and START left site.

Thursday, April 3, 2003, ERRS RM and START mobilized to the Industrial Highway site to gauge groundwater levels in all site monitoring wells and piezometers, as well as wells and piezometers on the airport property. After all wells and piezometers were gauged ERRS and START left site.

Thursday, April 10, 2003, ERRS RM and START mobilized to the Industrial Highway site to gauge groundwater levels in all site monitoring wells and piezometers, as well as wells and piezometers on the airport property. After all wells and piezometers were gauged ERRS and START left site.

Thursday, April 17, 2003, ERRS RM and START mobilized to the Industrial Highway site to gauge groundwater levels in all site monitoring wells and piezometers, as well as wells and piezometers on the airport property. After all wells and piezometers were gauged ERRS and START left site.

3. Enforcement:
Refer to Action Memorandum

B. Next Steps
ERRS and START will continue to gauge water levels in all piezometers, monitoring wells, and extraction wells on a weekly basis until directed otherwise by the OSC. Water level data will be used to evaluate the operation and effectiveness of the treatment system. U.S. EPA will operate the collection of oil for 3 years. At that time the Gary Chicago Airport will have to assess whether they will continue operation of the oil collection systems.

C. Results Achieved
Installation and startup of a ground water treatment system consisting of six extraction wells, an oil water separator, and a water treatment building have been completed. The treatment system has began pumping oil from the groundwater that exists on the industrial highway site property.

Over 1,700 tons of lead contaminated soil was fixated on-site and disposed of off site during the process of the treatment system construction.

D. Key Issues
Extraction wells XW-2 and XW-4 will continue to be evaluated. Attempts to promote oil production within these wells will continued.

V. COST INFORMATION (estimated as of March 18, 2003)

A CERCLA Funding (Conservation Chemical)

	Total Cost To Date	Ceiling
ERRS	$ 588,293.10	$ 690,000.00

B. OPA Funding (Industrial Highway)

	Total Cost To Date	Ceiling
ERRS	$ 1,277,100.34	$ 1,500,000.00
START	$ 40,693.45	$ 41,275.00
Total	$ 1,317,793.79	$ 1,541,275.00

The above accounting of expenditures is an estimate based on figures known to the OSC at the time this report was written. The cost accounting provided in this report does not necessarily represent an exact monetary figure which the government may include in any claim for cost recovery.

VI. Waste Disposal

Waste	Treatment	Loads	Tons	Disposition of Waste
Lead contaminated soil	Stabilized with lime kiln dust	66 loads	1,706.85 tons	Newton County Landfill, Newton County, IN.

APPENDIX R

STATE of INDIANA

STREAM POLLUTION CONTROL BOARD

INDIANAPOLIS

1330 West Michigan Street

December 29, 1972

VIA CERTIFIED MAIL

Mr. Norman J. Hjersted, President
Conservation Chemical Company of Illinois
6500 Industrial Highway
Post Office Box 6066
Gary, Indiana 46406

Dear Mr. Hjersted:

Re: Industrial Waste

For your consideration, we are enclosing three copies of an Agreed Order that contains time schedules for neutralizing of wastes, filling of earthen lagoons and providing proper storage of materials to be processed in the Company's manufacturing process.

The following timetable appears in the Agreed Order:

1. Neutralization of all materials now in lagoons or basins, removal of all wastes, treated or untreated and disposal according to state laws within sixty days from date of this Agreed Order.

2. Filling of lagoons and basins with inert materials, and provide proper storage for materials to be neutralized within 90 days of the date of this Agreed Order.

3. Provide an inventory of materials on the premises and provide a monthly inventory as per the provisions of the Agreed Order.

4. Submission of plans for a sanitary sewage treatment system within sixty days of the date of the Agreed Order.

5. Completion of sewage treatment system within 120 days of the date of Agreed Order.

The enforcement hearing has been rescheduled to 9:30 a.m., January 17, 1973, at the offices of the State Board of Health, 1330 West Michigan Street, Indianapolis, Indiana. If the agreement is signed prior to January 17, 1973, the enforcement hearing will be cancelled.

Mr. Norman J. Hjersted December 29, 1972

Please sign (2) two copies of the enclosed Agreed Order and return them to my office, as soon as possible. If you have any questions, please contact Mr. Samuel Moore of my staff at 317/633-4941.

Very truly yours,

Oral H. Hert

Oral H. Hert
Technical Secretary

RJCleaton/sjr
Enclosures

Conservation Chemical Co 9-6-77

Gary Lake

Gary Shepper

routine plus follow-up

Chemical disposal facility

none

city none

septic nil

none none

X A

R. Cleaton

This Company has been under Court order to perform certain functions to clean up its plant premises so as to not endanger the water table land, etc by pullution. This inspection, therefore, was to determine if the Company had carried out the orders of the Court.

Inspection revealed that 99% of the Court order had been complied with. Oil had been removed from standing water around an oil storage tank, drums of chemicals had been shipped to the Company's other Division for ~~x~~ disposal. The area had been leveled and an attempt been made to present a neat appearance. This last pahase needs more work.

Present were drums of cyamide containing material. It was explained that these drums were collected until it was profitable to make one shipment rather than many small shipments. This practice will be tolerated by the writer-inspector until it is getting out of hand.

The Company reports that their volume of business from neutralization of chemicals is practically nil and they are coneentrating on the' sale of chemicals for Sewerage plants. They are not, I'm told soliciting business for neutralization. The tanks of old sludges however are still full and they are trying to dispose of these sludes in acceptable fashion.

Will reuqire less surveilance.

September 16, 1977

To: J. Kreiger, Mike Shaffer, AG's Office
From: R. Cleaton

Subject: Conservation Chemical Co, Gary

The subject Company has been under order from Lake Count Circuit Court to remove harmfull chemicals, clean up spilled oil and other various potential water polluting hazards.

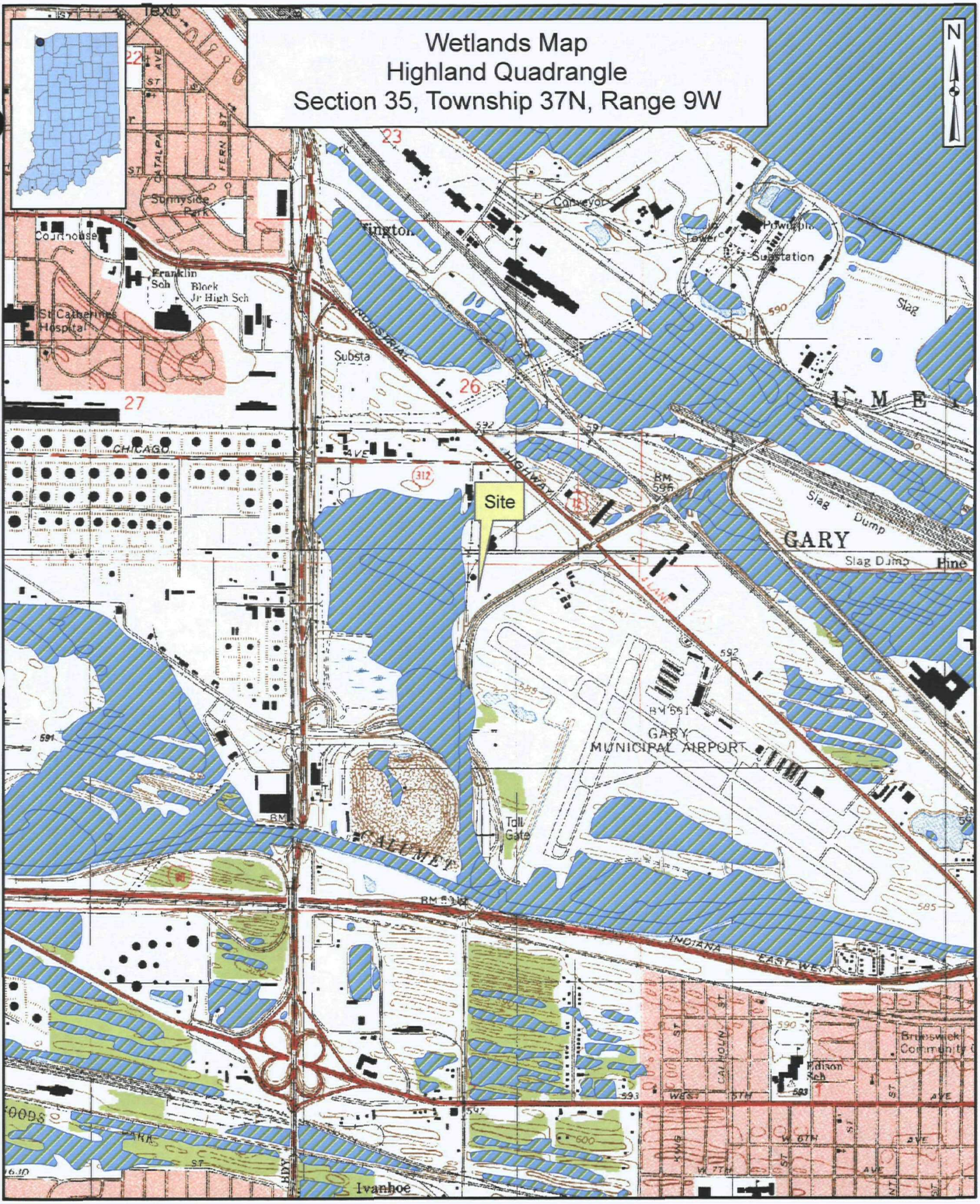
A recent inspection conducted September 6, 1977, showed that the Company has fullfilled 99% of its obligations as directed by the Court order. Inspection showed that the oil has been removed from the water surrounding an oil storage tank, chemicals have been transported to the Company's facility located at Kansas City, Missouri, for disposal and the grounds leveled an cleaned within reasonable factory-manufacturing operations.

There were drums of chemicals on the premise but these drums were those necessary for the Company to conduct its business and it was expalined that these chemicals were accumulated until it was profitable to made a load for shipment to the disposal facilities at the other Division.

I am therefore suggesting that further legal action on this cause be dropped.

If further inspections reveal that the Company is "backsliding" I will request that necessary action be instituted.

APPENDIX S



Base Map: USGS Digital Raster Graphic Enhanced (DRGe)

QUALITY ENVIRONMENTAL PROFESSIONALS, INC.
1611 South Franklin Road
Indianapolis, Indiana 46239

WETLANDS MAP

CONSERVATION CHEMICAL
6500 INDUSTRIAL HIGHWAY
GARY, INDIANA

Project Number: 07-05-022	Date: 7/19/07
Drawn By: CWH	Scale: 1"=400'
Checked By: NRV	Sheet: 1

APPENDIX T

Nivas R. Vijay

Mr. Vijay graduated from Purdue University with a Bachelors of Science Degree in Geology with Minors in Anthropology & History. He is an Indiana licensed Well Water driller, an Indiana accredited asbestos inspector, and an Indiana licensed Underground Storage Tank Decommissioning inspector. Mr. Vijay is employed at Qepi as a Project Manager in both the Indianapolis Office and the Great Lakes Regional Office in South Bend, Indiana performing a variety of duties. Mr. Vijay has experience in all phases of monitoring well installations, overseeing the construction, development, sampling, and abandoning of wells. Mr. Vijay has logged and analyzed soil following the advancement of soil borings with the use of a hand auger, drill rig, and GeoProbe rig. He has also aided in the installation of environmental remediation systems and also assisted in the daily operations and maintenance of remediation systems.

Mr. Vijay has performed research and development in areas of regions of impacted groundwater, determining confined and unconfined aquifers, determining flow paths, and calculating hydraulic conductivity by slug and pump test analysis. Mr. Vijay has also organized and performed vacuum test events and vacuum extraction events as part of site investigations and site remediation actions involving sites with soil and groundwater impacts. As part of the due diligence process, Mr. Vijay has completed numerous site walk-throughs, historical data review, regulatory review and report preparation.

Mr. Vijay currently serves as project manager for numerous sites with varying degrees of chemical impacts to soil and groundwater. Mr. Vijay has experience managing projects enrolled in the Indiana Voluntary Remediation Program, Indiana State Cleanup Program, and the Indiana Environmental Liability Trust Fund (ELTF) Program. Mr. Vijay also has experience managing projects in the State of Illinois and has conducted project work with the United States Environmental Protection Agency.

Mr. Vijay also has experience in Indiana working with Brownfields redevelopment projects. Mr. Vijay has completed site assessments, assisted in the procurement of funding and conducted remedial studies and remediation plans for numerous Brownfields redevelopment projects.

Philip N. Ward, LPG

BS Geology

Mr. Ward is the Director of Geologic Services managing a variety of environmental projects. Mr. Ward has more than 27 years of experience working for regulatory and non-regulatory government agencies, geotechnical engineering, civil engineering and geology/environmental consulting firms. Mr. Ward is a Licensed Professional Geologist in the State of Indiana and is a past President of Indiana Water Resources Association and Indiana Geologists organizations. Mr. Ward has experience with the development of business, office and department budget management, proposal preparation for project scope and budget for a variety of project types, including Phase I and Phase II

Environmental Site Assessments, wetland assessments, wetland mitigation design, wetland permitting, underground storage tank properties, Brownfield re-development properties, and commercial and industrial properties.

Mr. Ward's responsibilities also included subcontractor fee negotiation and contracting, supervision of staff, development and management of task specific health and safety plans, presentation of monthly health and safety meetings, project management, invoicing and preparation of Brownfield site assessment grant applications.